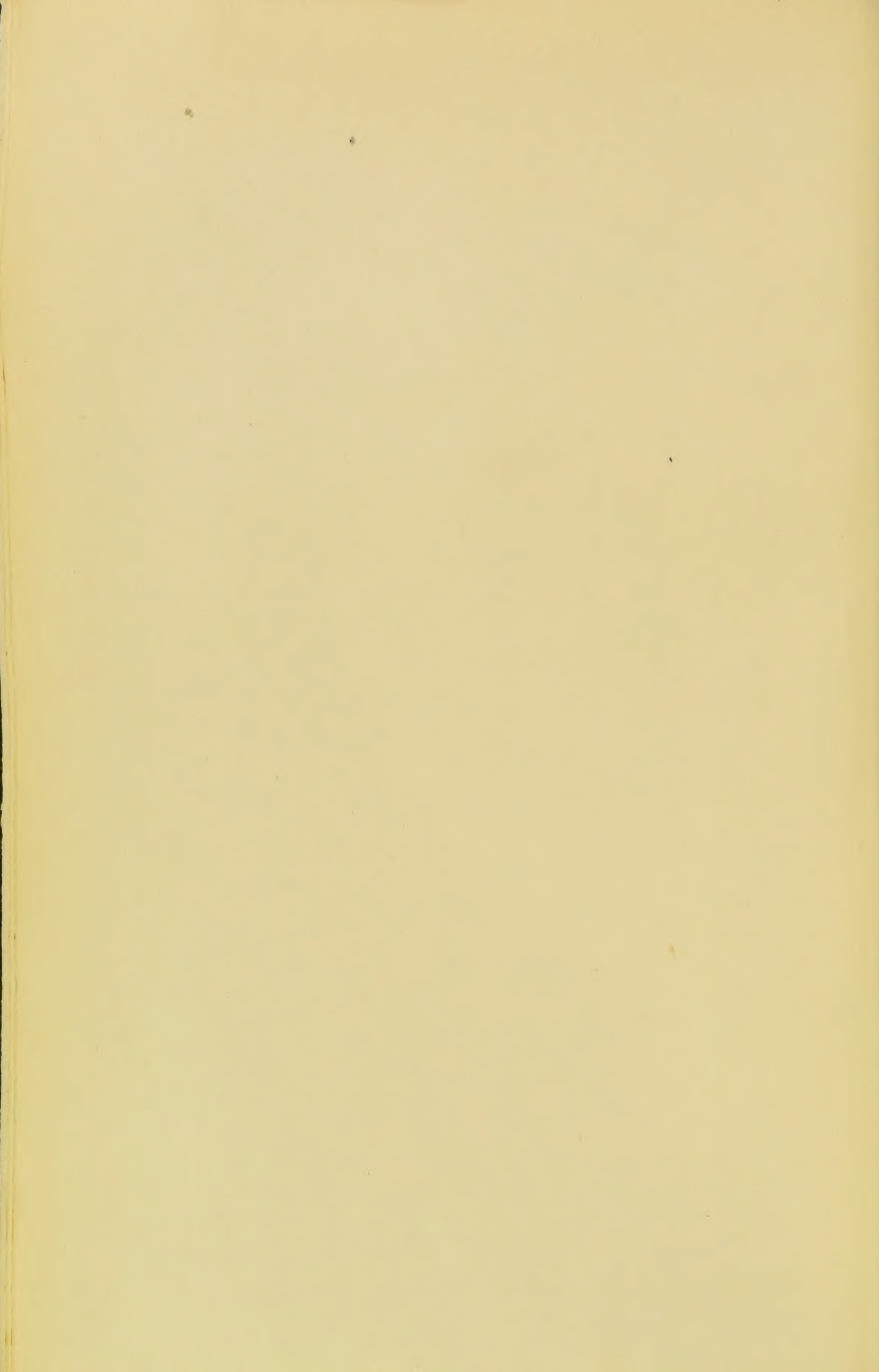


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BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

AN ILLUSTRATED MAGAZINE DEVOTED
CHIEFLY TO THE BIRDS ON THE BRITISH LIST

EDITED BY

H. F. WITHERBY M.B.E. F.Z.S. M.B.O.U.

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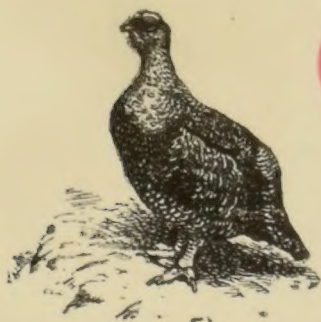
Rev. F. C. R. JOURDAIN M.A. M.B.O.U. H.F.A.O.U.

AND

NORMAN F. TICEHURST O.B.E. M.A. F.R.C.S. M.B.O.U.

Volume XXII

JUNE 1928 — MAY 1929



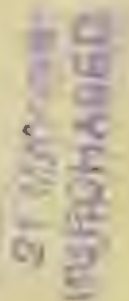
H. F. & G. WITHERBY
326 HIGH HOLBORN LONDON

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JUNE 1,
1928.

Vol. XXII.
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SLAVONIAN GREBE: BROODING, WITH RAINDROPS ON HER FEATHERS.
(Note Reflection.)

(*Photographed by Seton and Audrey Gordon.*)

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NOTES ON THE NESTING OF THE SLAVONIAN GREBE IN SCOTLAND.

BY

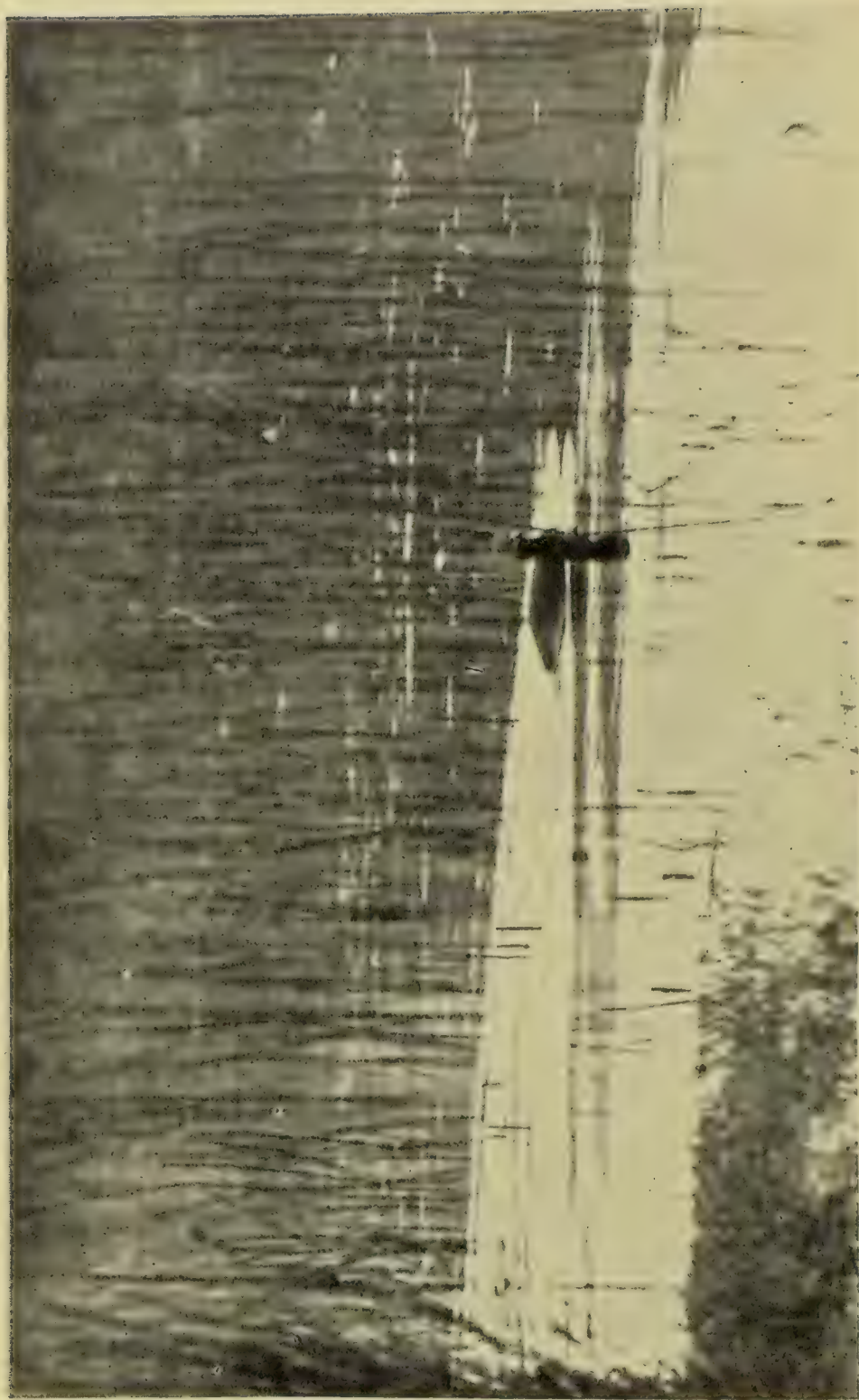
SETON GORDON AND AUDREY SETON GORDON.

ON certain lochs in a small area of the Highlands there are colonies of Slavonian Grebes (*Podiceps auritus*) which remain all the year round on the same lochs, perhaps moving from one to the other at times. We have not had the opportunity of seeing them in winter, but have been told this by keepers and others resident near the lochs. We visited one of these lochs on June 21st, 1926, and found about twelve pairs breeding. Sometimes two pairs were nesting close together in the same bed of reeds or equisetum. The chicks had hatched from the first nest we found, and the brood, consisting of three youngsters, were swimming in the water. They swam fully stretched out with even their beaks lying on the water, using their wing stumps like paddles. They were grey and white in longitudinal stripes, and had a large red excrescence on the forehead at the base of the bill. A fourth egg remained in the nest and a fifth was found near by in the water. The nest, like all those which we observed, was built of equisetum stalks and reeds and decaying vegetable matter, and was situated among the growing reeds or equisetum in the water. The three chicks were frequently carried together on the back of the larger Grebe, presumably the cock, as it had a broader patch of yellow feathers forming the ear-tufts. The scapular feathers were raised to form a shelter for the chicks on his back between the wings. While they sat on their father's back the hen fed them with silvery fish resembling elvers, about $1\frac{1}{2}$ inches long. Their appetites were insatiable. The alarm note of this Grebe is like that of the Little Grebe but louder and clearer. The cock frequently threw the chicks off his back, and turned himself over to preen his breast-feathers, but the chicks soon clambered back again. Occasionally, to their evident surprise, he dived and remained under water some time. A nest found close by in the same little bay contained four eggs, and we succeeded in watching and photographing this pair from a hiding tent on June 22nd, 23rd and 24th, during which time we observed both sexes incubating. We also saw them chasing each other off the nest.



SLAVONIAN GREBE: About to settle down after pushing away the covering from the eggs.

(Photographed by Seton and Audrey Gordon.)



SLAVONIAN GREBE : Swimming into the nest. The plants are Equisetum.

(Photographed by Seton and Audrey Gordon.)

At the other end of the loch we found another pair hatched on June 24th, and another with eggs in a more suitable place for photography. This second nest we watched and photographed on June 25th, 26th and 27th. The eggs were always covered up before the bird left the nest, unless it was unduly scared. When brooding, the bright chestnut-red flank-feathers came right up over the greyish wing-coverts and hid the wings. The birds covered and uncovered the eggs with lightning rapidity. The Grebe often dived under water straight off its nest. The mate always seemed to be in close attendance and the sitting birds were very wary and left the eggs at the least alarm. They appeared to be very clumsy on their feet like the Divers and were never observed on land.

The Slavonian Grebe chicks continued to use the nest even when they had been hatched several days. From these short notes it will be seen that these Grebes must start to sit between the last week of May and the first week of June. All the nests found were in thick beds of reed or equisetum, and it was impossible to reach many of them without wading through deep mud and water. Probably many nests are lost when there is much rain and the loch rises, especially if there is much wind. The lochs are unfortunately trouting lochs and the keepers kill a lot of the Grebes, believing that they destroy the spawn of the trout.

A TRANSATLANTIC PASSAGE OF LAPWINGS.

BY

H. F. WITHERBY.

IN a recent number of *BRITISH BIRDS* (Vol. XXI., p. 215) I made a preliminary announcement regarding a remarkable transatlantic flight of Lapwings (*Vanellus vanellus*) and undertook to give a fuller account when details were available.

Canon A. G. Bayley, who gave me the first news of the appearance of the Lapwings at Bonavista, Newfoundland, has taken great pains to obtain all possible details of their arrival, number and subsequent movements. He also informs me that the bird bearing "British Birds" ring No. X.5046, which, as already announced, was put on a nestling Lapwing by Dr. H. J. Moon at Ullswater, Cumberland, in May, 1926, was shot at Bonavista on December 27th, 1927. Mr. G. Rabbitts, of the Newfoundland Game and Inland Fisheries Board, and Mr. P. A. Taverner, the well-known Canadian ornithologist, have also very kindly placed at my disposal details, which they have collected from correspondents in various parts of Newfoundland. I am also indebted for information to Mr. F. A. Bruton and through him to Mr. J. L. Paton, and I have also gained some facts from Canadian and other newspapers. These reports, for which I now tender my grateful thanks, are all combined in the account below and in the accompanying map of Newfoundland.

As only a very few single examples of the Lapwing have been previously reported from N. America (see list below), the occurrence there of large numbers was evidently due to exceptional circumstances; and as the weather was undoubtedly the controlling factor in this extraordinary emigration or movement I sought the advice of the Meteorological Office of the Air Ministry on the subject. The Director has taken considerable interest in the event and has very kindly provided me with all the available information on the subject of the weather. I am also indebted to the Controller of His Majesty's Stationery Office for permission to reproduce a chart of the weather conditions over the North Atlantic on the essential dates, which has been prepared from one issued by the Meteorological Office.

Canon Bayley's evidence is clear that the Lapwings first appeared at Elliston, five miles east of Bonavista, on the afternoon of December 20th. They were in small lots of from two or three to fifteen to twenty, but the bulk were not seen until the morning of the 21st, when the local policeman estimated that he saw 500 in a morning's walk, and the

keeper of the fog alarm, three miles away, stated that he saw more than 1,000.

The birds first seen on the 21st may very well have arrived the evening before, and the evidence points to a large flock having started from Europe, and the birds composing it gradually stringing out on the long passage and arriving in small groups at intervals. This seems a fair inference to draw from the observations made at Bonavista.



Sketch map of Newfoundland. The crosses indicate the approximate points from which Lapwings were recorded and dates have been added where available.

That all the birds did not land in one locality is evidenced by a record from Harry's Harbour, Notre Dame Bay, about 150 miles N.W. of Bonavista, of "hundreds" being seen about December 20th and by the appearance of fifty or

sixty birds near Clarenville, about sixty miles S.W. of Bonavista, from December 20th to 23rd*. The birds are not recorded as having been seen in the neighbourhood of St. John's before December 26th, and their appearance here and farther to the south as well as in the west and extreme north of the island was, I think, due to their spreading from their centre of arrival, though exact dates are so often lacking in the records that this cannot be proved in every case.

Canon Bayley states that by December 31st very few were left at Bonavista, "some rose high in the air when the frost and snow came and flew away to the south-west: others perished."

Any birds arriving in Newfoundland before the 20th must certainly, I think, have departed from Europe independently. If this could be proved it would make the whole occurrence more interesting and remarkable, but, while there is some evidence for such an assumption, the details available are scanty and not so entirely satisfactory as to convince me that there actually was an arrival before the 20th. Mr. G. J. Penny of Ramea Island in a letter dated December 20th, sent with a specimen to the Editor of *Rod and Gun*, stated that the bird was killed "yesterday." If the date of the letter was correct this bird could scarcely have been one of the flock, since Ramea Island is in about the centre of the south coast. Another writer sending a bird from Garnish, Fortune Bay, with a letter dated December 24th, stated that the birds arrived "last week" in companies of ten to fifty each. As December 24th was a Saturday this would bring the date of arrival back to at least the 17th. Another report, however, from Fortune Bay gives the date as "Christmas." In the *Auk* (1928, p. 209) Mr. E. Ingersoll states that Lapwings were observed first on December 1st, but gives no details of this early appearance.

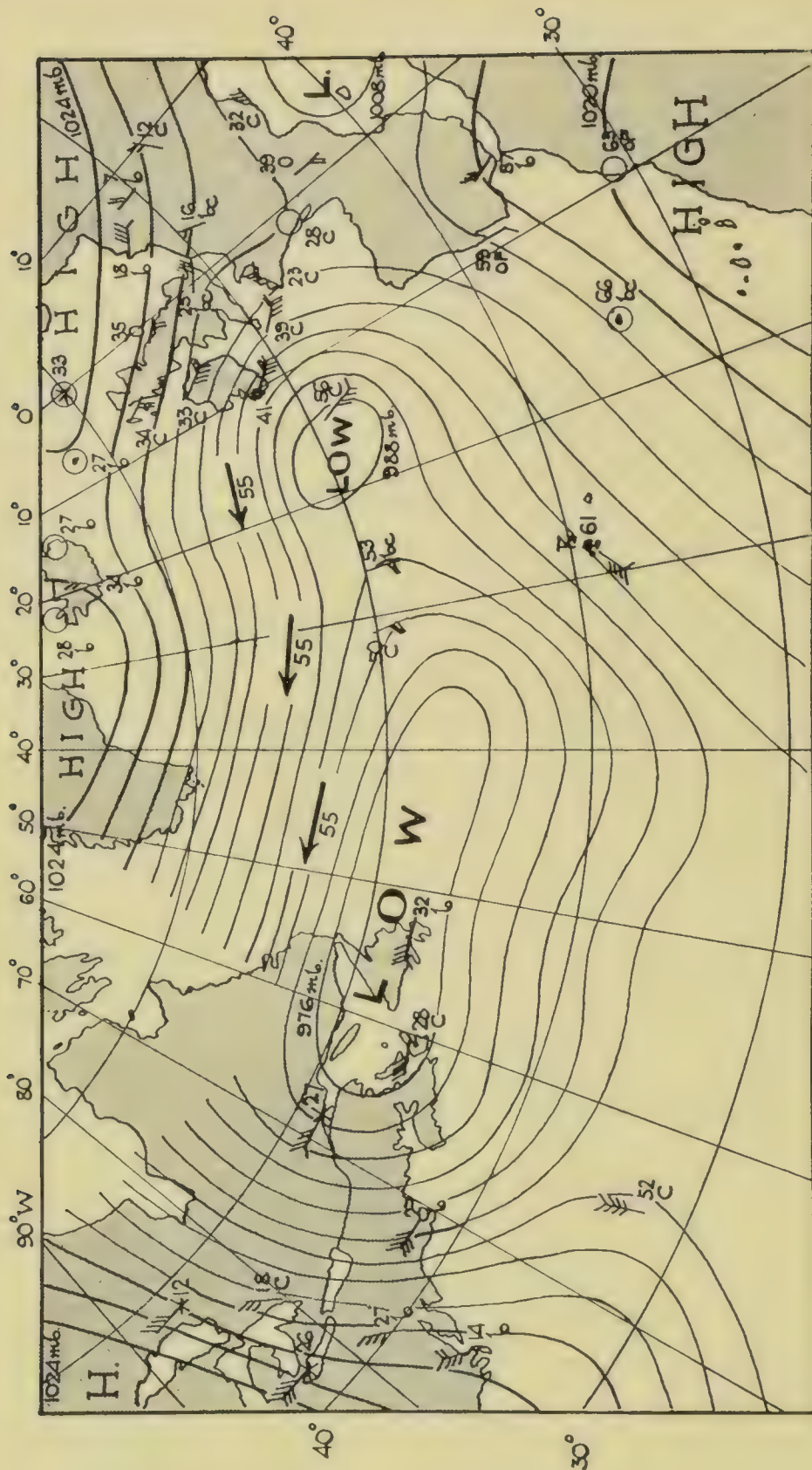
In order to study the influence of the weather on the movement it is necessary to ascertain approximately the time of the departure of the birds from Europe. As a working basis I have ignored the rather uncertain records of arrival before the 20th and have assumed that the first birds reached Newfoundland at 3 p.m. (say 7 p.m., G.M.T.) on December 20th. Colonel R. Meinertzhagen in a paper in the *Ibis*, 1921, p. 235, on the speed of various birds gives four observations of the Lapwing, the average of which works out at an

* In a Bulletin issued from Boston by Mr. E. H. Forbush on April 2nd it is stated that Capt. D. MacMillan sent a wireless from Anatalok Bay, Labrador, stating that Lapwings were seen there on December 22nd and at various other places "that week."

air-speed of about forty-five miles per hour. The Director of the Meteorological Office of the Air Ministry informs me that on the morning of December 20th the wind at approximately 1,000 feet must have averaged fifty-five miles per hour from almost due east all the way across the Atlantic save for the last 100 or 200 miles from the Newfoundland coast, where the wind was negligible. If the birds left the coast of Cumberland (the birth-place of the ringed bird), this to Bonavista would be approximately 2,200 miles. The direction of the flight must have been somewhat inclined to the south of west, and not due west, which would have brought the birds to the coast of Labrador. A flying speed of 45 m.p.h., plus a wind speed of 55 m.p.h., equals a speed over the earth of 100 m.p.h. On this reckoning the journey would have occupied twenty-two hours, but to this must be added two hours for the last portion where the wind did not help, thus giving a total of twenty-four hours. This would bring the hour of starting to 7 p.m., G.M.T., on the 19th. This statement ignores the fact that the birds were flying at a slight angle to the wind, but a calculation kindly made for me by Dr. Landsborough Thomson suggests that this would not diminish the achieved velocity by much more than 2 m.p.h., lengthening the journey by about half an hour. It also presupposes that the birds were flying at 1,000 feet above the sea. The wind decreases as the surface of the sea is approached, but the Director of the Air Ministry considers that, even if they flew at only a hundred feet, the wind would not have been so seriously reduced as to invalidate the conclusions. Such small errors can, therefore, be ignored in what is necessarily only an approximate estimate.

These conclusions fit in remarkably well with the following facts. It is well known that Lapwings start their emigrations after dark*. There was a very cold spell (with the temperature remaining below freezing point day and night) over a large area of England and Scotland from December 16th to 20th and this evidently drove a large number of Lapwings south and west, and such movements are normal under stress of severe weather occurring after the ordinary season of autumn migration. Moreover, the fact that nine Lapwings ringed in northern England and southern Scotland were reported from Ireland between December 19th and the end of January is confirmatory evidence for a large movement about this time.

* Cf. W. E. Clarke, *Studies in Bird-Migration*, Vol. I., pp. 242-3 and 246-7.



NORTH ATLANTIC WEATHER CHART FOR THE MORNING OF DECEMBER 20TH, 1927.

EXPLANATION:—The curved lines are lines of equal barometric pressure or "isobars." The wind current at 1,000 feet above the surface flows parallel to these lines, being strong where the isobars are close together and weak where they are widely spaced. The large arrows indicate the direction and speed, in miles per hour, of the wind current. Surface winds, temperature and weather are also shown.

Reproduced by permission of the Controller of H.M. Stationery Office from a chart issued by the Meteorological Office, Ministry.

If the birds started from Cumberland with the intention of flying to Ireland a direction slightly south of west would have been necessary to reach their usual wintering places and this direction would have brought them with the existing wind to Newfoundland. An alternative supposition that the Lapwings were intending to cross to France from, say, the neighbourhood of the Eddystone is extremely unlikely, because they could have made no progress at all in that direction, as the upper wind on the evening of the 19th was about fifty miles an hour from the south-east. This being so it may be concluded that the birds would never have started in that direction.

It therefore seems to me to fit in with the facts to suppose that these Lapwings left north-west England about 7 o'clock on the evening of December 19th on account of the frozen ground and consequent difficulty of obtaining food, and that they were bound for middle or southern Ireland. That this necessity to move happened to coincide with an exceptionally high easterly wind and that owing to this they were carried beyond the west coast of Ireland. Even if they realised this at once they would be unable to return owing to the velocity of the wind being greater than their powers of flight. They were then forced to carry on until the next land in the west appeared, and fortunately for them the wind held in strength and direction and enabled them to reach Newfoundland, two thousand miles away, before exhaustion and starvation brought them down.

That so many Lapwings were able to accomplish the journey was no doubt due to the exceptionally favourable conditions of the wind, which enabled them to make the passage in less than half the time it would have taken them in still air. To have flown for forty-eight hours continuously without food would have been, I should think, impossible, and to have rested on the water any appreciable time, which might have been done with a calm sea, would have added to the danger of starvation. As the birds were flying from adverse conditions they are not likely to have been very well nourished when they started. As it was these birds could not, I think, have rested on the water, since the sea was very rough at the time.

Mr. F. A. Bruton informs me that on a voyage from Newfoundland to England he caught on deck a Song-Thrush (*Turdus philomelos*) when the ship was some 500 miles west of Ireland on December 20th, the very day the Lapwings arrived in Newfoundland. There is a good deal of evidence from birds alighting on ships to show that various species

regarded as some evidence towards the theory that birds can keep a certain direction without the guidance of land marks.

When the Lapwings arrived in Newfoundland they were very thin and very tame and tired. For the first few days the weather was open and many of them recovered, though some succumbed and some were so weak that they were caught. Crops examined of birds shot contained "beetles, marsh-berries, grass roots, worms." A few days after they landed snow came and drove them again south-west. Very few were left at Bonavista at the end of December, and the last was reported on January 15th. Numbers perished around the shores of Fortune Bay at the end of December, and although a good many were still left on the Burin Peninsula in the middle of February, birds had already reached Cape Breton, Nova Scotia, on December 26th and others later reached still farther west in that Province, to Richmond County and Antigonish County (December 30th), while in the first week in January hundreds are said to have been killed by a great snowstorm in St. John, New Brunswick*, and a bird was even reported from the island of Grand Manan in the Bay of Fundy on January 6th. Whether any have survived seems very doubtful, and that any can return seems impossible.

Mr. P. A. Taverner informs me that a Lapwing was taken in October, 1927, in Cumberland Gulf, Baffin Island, but this bird probably wandered via Iceland and Greenland and must be classed among the single stray occurrences enumerated below, and can have no connection with the flight of the flock in December.

Previous occurrences of the Lapwing (*V. vanellus*) in America.

Greenland, single birds, January 1820 and 1847, J. Reinhardt, *Ibis*, 1861, p. 9.

Newfoundland, single bird, November 23rd, 1905, W. Brewster, *Auk*, XXIII. (1906), p. 221.

Nova Scotia, single bird, March 17th, 1897, H. Piers, *Auk*, XV. (1898) p. 195.

Long Island (New York), two birds, December 1883, Dutcher, *Auk*, III. (1886), p. 438. Single bird, autumn 1905, C. W. Beebe, *Auk*, XXIII. (1906), p. 221.

North Carolina, single bird, November 11th, 1926, H. H. Brimley, *Auk*, XLIV. (1927), p. 248.

Bahamas, single bird, November 1900, J. H. Fleming, *Auk*, XVIII. (1901), p. 272.

Barbados, single bird, December 24th, 1886, H. W. Feilden, *Zoologist*, 1888, p. 301.

Also has occurred in Alaska and in Jan Mayen, Faroes, Iceland, Canary Islands, Madeira and Azores (once).

* Mr. P. A. Taverner informs me that the great numbers stated may have been due to a misunderstanding, as he has no news of any more than individual birds being found in New Brunswick.

MANX ORNITHOLOGICAL NOTES, 1927.

BY

P. G. RALFE.

THESE notes are continued from Vol. XXI., No. 1, June, 1927. First records of the Fulmar and Sandwich Tern (C. Oldham) and reports of the occurrences of Crossbills (C. Oldham and Col. Madoc) have already appeared in *British Birds*, November, 1927, p. 161, and October, 1927, p. 126. The Little Gull is also recorded (T. A. Coward, November, 1927, p. 161). There have been, during the year, a few observations of some of the smaller birds little known on the Island, as the Redstart, Garden Warbler and Yellow Wagtail. White Wagtails have again been seen on migration. The usual species have occurred at the lights in comparatively small numbers; Starlings, Fieldfares, Redwings, Blackbirds and Larks being most largely represented, the most noticeable movements being in the first days of March and the last week in November. House-Sparrows were several times killed at the Point of Ayre Light, also a few Ringed Plovers and Water-Rails. The last species, though little known to residents, must be really abundant in suitable localities.

Reports of "oiled" sea-birds of various species are frequent. The colonies of Terns are watched during the season and appear to be fairly prosperous. The Great Black-backed Gull is again reported as breeding in a number of localities; it is a dominant and increasing species.

For many of the following notes I am indebted to Col. Madoc.

RAVEN (*Corvus c. corax*).—Col. Madoc saw a nest with six eggs on February 28th, and one with seven eggs on April 7th.

TWITE (*Carduelis f. flavirostris*).—Col. Madoc reports a female feeding young, July 3rd. Though long ago recorded as a resident in Man, little has come to light regarding this bird in recent years.

SNOW-BUNTING (*Plectrophenax nivalis*).—The species appeared in the winter 1926-7 and 1927-8: in one case some forty birds on Snaefell.

PIED FLYCATCHER (*Muscicapa h. hypoleuca*).—On May 15th Col. Madoc saw a female flying about on the shore at Ballaugh.

BLACK REDSTART (*Phœnicurus o. gibraltariensis*).—Col. Madoc saw an immature bird at Peel Castle, November 17th.

SWALLOW (*Hirundo r. rustica*).—Late occurrences, November 3rd, 6th and 13th, are in evidence from various localities.

BITTERN (*Botaurus s. stellaris*).—On December 7th a mature Bittern was obtained in the Northern Curragh and presented to the Manx Museum.

BEWICK'S SWAN (*Cygnus b. bewickii*).—Mr. James Bell reports the shooting of an immature specimen in the north of the Island in the autumn. Another immature bird was taken by boys in the open-air swimming bath at Ramsey in November, and given to the Manx Museum. It was a very small specimen, extremely emaciated, and weighed only five pounds.

PINK-FOOTED GOOSE (*Anser brachyrhynchus*).—On January 4th a specimen was found dead in Lough Cranstal by Mr. F. A. Craine, apparently the second Manx record.

TUFTED DUCK (*Nyroca fuligula*).—Appears to be becoming more common as a winter visitor. Frequent reports of specimens on salt and fresh water all over the Island.

SMEW (*Mergus albellus*).—Col. Madoc and Mr. T. A. Coward saw two mature males at Derbyhaven, December 4th.

MANX SHEARWATER (*Puffinus p. puffinus*).—In a large mass of papers recently discovered in Castle Rushen by the custodian are many relating to the "puffins" of the Calf slet, which were traded in by the officials of the Lord of Man. In 1711 the accounts for the year show that there were sold 822 dozen and two birds, realizing £36 2s. 2d. (Rabbits at 2d. a couple fetched in the same year only £1 2s. 8d.) Perhaps the systematic and long-continued destruction of the young was responsible for the extinction of the species, rather than other reasons which have been suggested.

BLACK-NECKED GREBE (*Podiceps n. nigricollis*).—Col. Madoc and Mr. Coward saw one partly in summer plumage at Fort Island in early December; a few days later Col. Madoc and Mr. Cornish saw two in the same vicinity. Col. Madoc also reports observations of the three other larger species of Grebe.

TURTLE-DOVE (*Streptopelia t. turtur*).—Another specimen was received by the Manx Museum from Ballarhenny, Michael, June 7th, 1926.

LAPWING (*Vanellus vanellus*) and GOLDEN PLOVER (*Charadrius apricarius*).—Both species were present in the Island again this year in very great numbers during the hard weather of the later months.

BLACK-HEADED GULL (*Larus r. ridibundus*).—There are as usual reports of the very early assumption of the dark hood, as at Douglas on December 4th and 7th.

GREAT SKUA (*Stercorarius s. skua*).—September 2nd, Mr. C. Oldham saw one close inshore at the Point of Ayre.

LITTLE AUK (*Alle alle*).—Four seen by Mr. Cornish and Col. Madoc off Fort Island, October 28th. Col. Madoc saw two there again on November 6th, and on November 10th he and Sergt. Cregeen observed two at Onchan. On December 26th one flew past Col. Madoc and his son at Fort Island during a N.E. gale.

OBITUARY.

ROBERT MILLER CHRISTY.

THE unexpected death of Miller Christy, as he signed himself and was generally known, has deprived Essex of one of its most prominent figures, for the greater part of his varied writings had some relation to the county of his birth.

Christy came from an old-established Essex Quaker family, settled near Chelmsford, where he was born in May, 1861. He died as the result of an operation on January 25th, 1928. He was never married.

His interest in natural history and kindred subjects was of life-long duration, for during his school days at Bootham School, York, he is said to have collected ornithological and other specimens and to have written on them, and as a young man he spent about a year in Manitoba, increasing his knowledge of his favourite subjects.

Although Christy could not be described as a specializing ornithologist, yet he turned to this subject with that natural aptitude which enabled him to deal with a diversity of subjects. At the age of nineteen we find him writing in the pages of the *Transactions of the Essex Field Club*, "On the Occurrence of the Great Bustard and of the Rough-legged Buzzard, near Chelmsford, during the winter of 1879," with an intimacy which suggests a strong grasp of the subject. In 1884 he contributed to the *Norfolk and Norwich Naturalists' Society's Transactions* an article of some importance: "Do the Blackbird and Thrush ever Interbreed?" He continued to write papers and notes relating to the ornithology of Essex, until in 1890 he completed his greatest piece of work, *The Birds of Essex*. In the following year he published *A Catalogue of Local Lists of British Birds, arranged under Counties*, which may have been the parent of similar subsequent works by other authors. After the publication of his book his interest in Essex bird matters continued unabated, and he wrote further notes and papers on the subject. In 1892 he wrote on the occurrence of the "Spotted Eagle in Essex," in the pages of the *Zoologist*. The historical aspect of the subject appealed to Christy, and in 1899 he wrote in the *Essex Naturalist* an article on the "White-tailed Eagle at Harwich in 1666," followed in 1907 by "On the Breeding of the Kite and Buzzard near Maldon in the fifties and sixties of the Last Century."

In 1903 he contributed part "Aves" to the *Victoria History of the County of Essex* and about the same time compiled a lengthy supplement to his *Birds of Essex*, which was never published and which he most generously placed at the disposal of the present writer. His last ornithological contribution appears to have been an obituary on Capt. L. Gray, published in *British Birds* in 1918.

Christy's forte was compilation, his researches being of the most thorough nature, to which the writer can testify, having been compelled to cover the same ground. His services to the ornithology of Essex cannot be judged merely by his book and papers, important as they are, for their influence must have stimulated interest in the subject throughout the County.

W. E. G.

NOTES

BARK-STRIPPING BY ROOKS.

TOWARDS the end of March, 1928, I noticed a Rook (*Corvus f. frugilegus*) violently exerting itself in stripping bark from a lime tree not far from a Rookery in Worcestershire, and found that branches for yards in length had been denuded of bark. It may, perhaps, be assumed that a Rook in following the common method of wrenching off living twigs from a tree left an inch or two of stringy bark adhering to a bough, and that it or another bird on tugging at this loose end ripped off a useful length of bark, and, finding the result satisfactory, continued the practice.

E. ST. GEORGE BETTS.

BLUE-HEADED WAGTAIL IN CHESHIRE.

ON April 22nd, 1928, I saw a typical male Blue-headed Wagtail (*Motacilla f. flava*) feeding on the Sprinklers at Prestbury Sewage Farm among about thirty Yellow Wagtails (*Motacilla f. rayi*), all of which were male birds.

The white eye-stripe was very noticeable, especially behind the eye, and the chin was white. The rest of the head was slate-blue. Records from this part of the country are apparently not numerous and the appearance of one may be worth publishing.

R. M. GARNETT.

LESSER WHITETHROAT AND GARDEN-WARBLER IN CORNWALL.

ON the morning of May 2nd, as I was walking down the coombe that drops from Kilkhampton to the sea, my attention was arrested by the loud rattling part of the song of a Lesser Whitethroat (*Sylvia curruca*). Crossing a meadow, I found the bird in an old hedge-row at the edge of an orchard, and for some minutes watched it there feeding and singing. Lower down, where the coombe is thickly wooded, two Garden-Warblers (*S. borin*) were singing in thickets some half a mile apart. Four days before, I had watched a Garden-Warbler singing in the wooded valley of the Valency near Boscastle.

CHAS. OLDHAM.

WILD-FOWL ON NORTH WORCESTERSHIRE WATERS.

AMONG the less common wild-fowl visitors seen by myself on the north Worcestershire waters known as Cofton, Upper

Bittell, and Lower Bittell Reservoirs during the past year or thirteen months were the following:—

On March 26th, 1927, an adult Cormorant (*Phalacrocorax c. carbo*), showing white thigh patches, was upon the small Cofton Reservoir in the afternoon. It had not been there when I passed along the water earlier in the day. Another, in immature plumage, was present upon Upper Bittell on May 21st of the same year.

From January 14th to March 24th, 1928, from two to seven female Goosanders (*Mergus m. merganser*) were to be seen on Upper Bittell. I saw seven on February 25th and the same number on March 3rd. Like the single bird upon this water in the preceding winter, they became less wild towards the end of their stay.

On October 8th, 1927, a single female Goldeneye (*Bucephala c. clangula*) was noted upon Lower Bittell Reservoir as the first arrival of the species; and among various other observations may be mentioned a company of six birds, including two adult drakes, upon Upper Bittell, February 18th, 1928, and upon this occasion there was some display by the two drakes. A single female was on Cofton Reservoir with eight Tufted Duck (*Nyroca fuligula*) on April 6th. In the preceding season my latest note was of three on April 9th.

Two drake Shovelers (*Spatula clypeata*) were feeding in shallow water by the margin of Lower Bittell on November 12th, 1927. Five, including two drakes, were present on Upper Bittell, March 24th, 1928; and one pair was still there on April 21st. Last year the latest note was of a pair on April 16th.

The first instance, in my own experience, of the Pintail (*Anas a. acuta*) visiting these waters was on April 6th, 1928, when two drakes were present on Upper Bittell, and, presumably, one duck, although distance prevented actual identification; but as she was closely consorting with one of the drakes there can be little doubt upon the point.

I noticed an abnormally marked male Tufted Duck on December 17th, 1927, which was swimming upon a small pool of open water in the midst of the otherwise frozen reservoir. The front half of the usually white side, upon the left, was black, with the exception of a narrow perpendicular bar, which evidently represented a remnant of the white tract, the front edge of the white streak being, of course, formed by the normal black of the breast, and the hind part by the abnormal black of the side. The arrangement of colour on the right side was as usual. This is the only variation

of the Tufted Duck which I have myself noticed, and possibly the species is but little subject to variation. The description given may, perhaps, enable some other observer to recognise the bird in its wanderings.

A single male Common Pochard (*N. f. ferina*) was on Lower Bittell on August 4th and September 3rd, 1927, and I have reason to think it had been there for some time prior to the former date.

Owing to the fullness of the reservoirs, and consequent absence of mud at the margins, there has been no inducement to waders to remain, but I saw one Green Sandpiper (*Tringa ochropus*) in the district on September 3rd, 1927.

Curlews (*Numenius a. arquata*) are seldom seen, but a flock numbering upward of twenty birds was flying N. or N.W. in a strong westerly wind on August 27th, 1927, at a height of about 200 feet and uttering their call note.

E. ST. GEORGE BETTS.

WILD-FOWL ON STAFFORDSHIRE RESERVOIRS.

As in previous years, I send a number of observations made between October, 1927, and April, 1928, at the most westerly of the large Staffordshire reservoirs, and include a few made at Gailey Pool.

There is not a great deal new to report. Ducks have, on the whole, been as plentiful as ever, but only one Gadwall (*Anas strepera*) was seen—on October 16th and 22nd and on April 7th and 29th. On April 7th, Mr. J. R. B. Masfield, my wife and I watched five Garganeys (*A. querquedula*)—two pairs and a third drake—at very close quarters; one pair fed in a few inches of muddy water with a pair of Teal (*A. c. crecca*), and all four birds were visible in the circle of a telescope at one time; the two pairs flew round for a time with the Gadwall. On April 29th there was still one drake Garganey on the water.

There were more Pintail (*A. a. acuta*) than usual: on October 9th an adult drake; on October 16th nine or ten ducks or immature drakes in a close flock, and on Gailey Pool an adult drake and two brown birds, but by October 22nd all had gone except a drake at Gailey Pool; there was one duck on December 24th.

Goldeneyes (*Bucephala c. clangula*) were first seen on October 10th, but few remained when the water was partly frozen at the end of the year. On February 4th, however, fully thirty were present and they displayed most freely and undoubtedly drake against drake. Two drakes in company with a brown-headed bird swam side by side and repeatedly swung their

heads back to their tails—practically in unison ; in another group of about fifteen birds, five or six old drakes displayed a great deal and, in addition to extending their ruffs and swinging their heads back, one at least scattered water behind with a kick by the foot ; in both cases the ducks paid no heed at all. On April 7th there were still thirty to thirty-five present and the drakes now displayed when alone with a duck : one drake I was watching splashed a good deal with a backwards kick ; it extended its ruff as usual and pointed its bill in the air and several times it swung its head back, though not with quite so much violence as those I had seen in the winter ; it also approached the duck in a sinuous sort of way—with neck, head and body low in the water.

On November 12th a Common Scoter (*Oidemia n. nigra*) flew down to the reservoir at a tremendous speed, coming in against a strong north wind.

Goosanders (*Mergus m. merganser*) were seen on three days and with one exception all were brown-headed birds : on December 29th there were three and one on February 4th, and on the latter date on Gailey Pool I saw sixteen or seventeen, which included the only adult drake seen ; on April 7th there were still three on the westernmost reservoir and one on Gailey Pool.

Smews (*M. albellus*) we saw twice : on December 29th a white drake and three or four brown-headed birds, and on February 4th two brown-headed birds.

Three White-fronted Geese (*Anser albifrons*) seen on October 16th have already been reported (Vol. XXI. p. 232).

On December 29th there was one Slavonian Grebe (*Podiceps auritus*)—a bird with a rather more dusky face than normal but undoubtedly a Slavonian from its size and from the straightness and *depth* of its bill in comparison with the Black-necked Grebes (*P. n. nigricollis*) seen here comparatively often. The latter species was seen on October 9th and 16th on the 9th there were two birds which allowed a very close approach and varied slightly in size and in the amount of dusky colour on the neck ; on the 16th there was only one to be seen.

A small number of Black-headed Gulls (*Larus r. ridibundus*) was almost always present and increased in numbers to about fifty at the end of December and in February ; with them were two Common Gulls (*Larus c. canus*) on October 9th.

A. W. BOYD

GARGANEY AND BLACK-TAILED GODWIT IN NORTH LANCASHIRE.

On April 9th. 1928, I visited the flooded moss at the head of Morecambe Bay, to which the notes in *British Birds*, Vol. XVIII.; pp. 25 and 26 and p. 58 refer.

Five Black-tailed Godwits (*Limosa l. limosa*) flew up and down the moss, passing close to us on one occasion; two of them were in breeding plumage.

The Black-tailed Godwit has rarely, if ever, been seen in Lancashire in spring; the notes recently published from south Lancashire (Vol. XXI., p. 190-194) include a number of records between July and November only, and they seem to be typical of earlier records.

Among the duck I saw a pair of Garganey (*Anas querquedula*) which flew about in company with a score of Teal (*A. c. crecca*). This occurrence is interesting in view of the more frequent records in recent years in Cheshire and Staffordshire and their appearance in Staffordshire two days previously.

Other duck were still present in great quantity, particularly Wigeon (*Anas penelope*)—generally in pairs—and we saw at least six pairs of Pintails (*Anas a. acuta*) and two Grey Lag-Geese (*Anser anser*).

A. W. BOYD.

WOODCOCK PERCHING IN TREE.

On April 2nd, 1928, as I was going through a clump of yew trees (in Perthshire), a bird flew off a branch some eight feet up, with a loud clatter of wings, like a Wood-Pigeon on a small scale. I got an excellent view of it, and was greatly surprised to see it was a Woodcock (*Scolopax rusticola*).

SCONE.

[For previous cases of Woodcock perching in trees see *B.B.*, XIII., p. 142.]

LATE STAY OF SWALLOWS AND HOUSE-MARTINS IN KENT.—Mr. Lionel H. Dagley informs us that he saw three Swallows (*Hirundo rustica*) on December 16th, 1927, and a House-Martin (*Delichon urbica*) on November 14th, 1927, at Broadstairs.

CUCKOOS RETURNING TO SAME SUMMER QUARTERS FOR NINE AND TEN SUCCESSIVE YEARS.—Mr. Thomas L. S. Dooly and Major Van De Weyer both write that the Cuckoos with the peculiar notes, previously reported by them at Formby, Lancs., and Hungerford Park, Berks. (Vol. XVI., pp. 107,

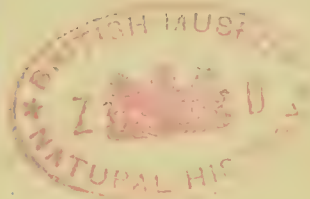
190 ; Vol. XVII., p. 23 ; Vol. XVIII., pp. 30, 31 ; Vol. XIX., p. 30 ; Vol. XX., pp. 56, 132, and Vol. XXI., p. 69), returned to the same places for the ninth and tenth years respectively, before April 30th and on April 23rd, 1928.

GREEN WOODPECKER EATING BREAD.—Commander Alec T. Wilson informs us that a Green Woodpecker (*Picus v. virens*) is in the habit of coming to a window-sill of his house in Breconshire, and feeding on the bread put out for birds.

RUDDY SHELD-DUCK IN WILTSHIRE.—Mr. Martin W. Willson reports seeing a female *Casarca ferruginea* on the Avon above Longford Castle, near Salisbury, on April 12th and 21st, 1928, and suggests that it had escaped from some private waters, which seems very probable.

COMMON SCOTER IN LONDON.—Mr. L. Parmenter informs us that on April 13th, 1928, he saw a pair of Common Scoters (*Oidemia n. nigra*) on Long Water, Kensington Gardens. They were resting on the water close to the shore of the bird sanctuary where the bushes partly hid the public from their view. The drake was the more nervous, the duck being intent on preening. For a previous occurrence in the London area see Vol. XXI., p. 236.

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THE FIGHTING METHODS OF THE GREAT CRESTED GREBE.

BY

DONALD GUNN.

THE combative side of any bird's nature must of necessity be most in evidence during the breeding season ; but at other times of the year many birds are gregarious, and their behaviour then towards their fellows and towards other birds seems to vary greatly in accordance with race. One bird, such as the Starling, seems to find in the mere presence of its companions an incentive to bickering ; another, like the hooligan Sparrow, extends the right to live to his own kind alone, the right to live at peace to none. Other birds again, of sociable habits, appear to live at harmony with all the world ; this trait is perhaps more general (as it certainly is more obvious when present) among the waterfowl whose existence, being in the main two-dimensional, entails the constant criss-cross of a pavement life.

A Mallard, for instance, is the embodiment of tolerance and good nature and, though on occasion he can be a dour fighter with one of his own species, hardly ever objects to the presence of other birds, even during the nesting season.

The Grebe on the other hand though almost as amiable, or indifferent, as the Mallard during the winter, seems more inclined when once he has established his rights over a given area of water in the spring to resent the intrusion of another Grebe, and often that of any swimming bird towards whom he can have no hostile feelings as either a sex rival or a food competitor.

Without seeming to detract further from his character, I will pass on to the subject of his fighting methods.

That the contests between males for possession of the females make for a survival of the most vigorous and so ultimately for the improvement of the race, may be accepted. This, as I understand it, forms an integral part of the Darwinian theory of an evolution having an upward trend. Consequently, the annual death-roll due to sex-rivalry must be very considerable, and one sometimes wonders if Dame Nature, faced by the obvious danger of a serious depletion of the stock of breeding males if death were the invariable price paid for defeat, has or has not made any attempts to avert such a check to her general scheme of increase. And if so, whether she has tested more than one plan, for it almost seems that, apart from structural modifications

and the results they may bring about, there are certain cases in which a well-armed animal, when matched against one of its own kind, appears to decline to employ its weapons in the only effective way ; preferring to divert them to some other and more innocuous use that might almost be called misuse. And in such cases one can only ask by what process the immediate aim of conflict (to dispose effectually of the adversary by death or injury) has been lost sight of and, seemingly, supplanted by some other form of contest that is largely composed of ceremonial—just as the knights of the middle ages were content to modify their wartime methods into those of the tilt-yard when competing with their fellow Christians.

These are questions for the evolutionists ; let me return to the fighting methods of the Crested Grebe (*Podiceps c. cristatus*).

If one were given the British List and told to name those birds possessed of beaks best fitted for stabbing an adversary, I suppose everyone's selection would include Heron, the Divers, Gannet and perhaps Woodpecker.

Somewhere close behind these would come the Grebe ; for though more lightly armed none of our birds has a beak that would seem better adapted for use as a poignard. A determined blow with the weight of the head behind it would, one would think, transfix an adversary ; and every fight would be terminated with the first successful delivery of such a blow.

Yet blows such as this form no part of what I may call a "stand up" fight between two Grebes ; and by that I mean a duel, a clash between two personalities equally imbued with the will to win. As this definition excludes mere one-sided attacks upon an opponent who confesses his inferiority, I may clear these latter out of the way by describing them first.

When a male Grebe on guard over his home sees his territory invaded and determines to sweep it clear, he moves towards the intruder in a threatening manner and uttering warning cries. With his head lowered till his beak is nearly parallel with the water and his ruff is trailing in it, he advances steadily with short barks. Should this hint fail to obtain a respectful reaction, he dives, often at a very shallow depth so that the wave he makes can be seen and his course judged—this is in itself a menace as it advertizes his intention of striking his victim from below. Seeing that a swimming bird has his "underbeneaths" fully exposed, no parry,

no riposte, is possible to him when attacked thus, and his answer must be either a dive or wing-flight. Once on the wing he is likely to travel far before alighting again, but should he be satisfied with a short flight the threat is repeated *da capo*. As a fact, his retreat usually takes the form of a hydroplaning scutter, half flight and half run, along the surface of the water.

The same method is also employed against birds of other races who, obviously, are less likely to grasp the meaning of its warning stages. I have seen an unfortunate Mallard drake attacked while doing sentry-go over his sitting mate, whose nest happened to be rather too near the Grebe's. He disregarded the Grebe's preliminaries and, on being struck below the waterline, rose with such a piteous clamour that the duck's nerves gave way and she too flew off her eggs, quacking her loudest. I have seen Coots routed in the same way; and Miss Frances Pitt, in her *Waterside Creatures*, page 121, gives a moving account of an attack upon a family of ducks. But a form of attack to which there is no parry—however gratifying it may be to the attacker—is not a fight, it is an assault, and bears no relation to the actions of two Grebe who are determined to “have it out.”

A description of a fight I saw recently will serve for others I have seen and which have been quite similar in all their essentials.

Two pairs of Crested Grebe were involved—we may distinguish them as “A” and “B”.

We will accept the “A” pair, who were in possession, as the builders and rightful owners. After cruising about they presently swam towards the nest in single file: one bird (which we will assume to be the female) flopped up on to the nest and extended herself along it. The other bird had swum about her irresolutely for some moments, when “B” pair, who had been lurking in the shadows round the corner of the island, suddenly appeared together and approached in a rapid, resolute way, as though they had discussed the chances of a raid and had decided on trying to seize the nest. The prone bird then jumped off the nest into the water and the two males gave battle, leaping at each other almost vertically breast to breast, just as though they had been two gamecocks trying to use their spurs; this was repeated many times with great splashing and loud cries, each bird keeping its bill open. Then, suddenly, as though by mutual consent they interlocked their bills at about right angles, one having hold of the upper mandible of his opponent and one the lower

From that moment the contest resolved itself into a wrestling match, each bird attempting to submerge and, presumably, to drown his fellow. The fiercer fighter ("A," I believe) bored into the other with his side as though attempting to override him and at the same time flogged the water with his unencumbered wing, in that way turning himself and his opponent round and round and preventing the latter from improving his position, which became decidedly perilous as he was beaten under and his neck became more bent and more twisted.

Ultimately "B" slipped his hold, dived, and made his escape. "A" then went off to tell his wife all about the affray; "B" no doubt doing the same thing, though from a somewhat different point of view. (Miss E. L. Turner in her *Broadland Birds* has described just such a fight between two Crested Grebe and draws attention to their attempts to drown each other.)

And now, as I have alluded to the Woodpecker as a bird even better fitted than the Grebe for dagger-work of a serious kind, I will point out that E. Sealeus in his *Birdlife Glimpses*, page 225, gives an account of a fight between two Green Woodpeckers who fought in a way that was very similar, except that, necessarily, the attempt to drown formed no part of it.

He says, "After the first light fencing, the birds seemed to lock bills gently, as though by mutual intention to do so Then, the instant they had interlocked them, they set to pulling, with a sudden violence, as though the real serious business had now commenced each bird was, several times, half pulled and half thrown over the other's back."

The resemblance between the methods of these two conflicts is close enough to be interesting. In each case the birds are armed with a weapon that would inflict a terrible penetrating wound, and in each case it is not used for that purpose and there appears to be a determination to let the contest apse into a mere wrestling match.

The Gannet too—whom I have included among the birds armed with long, straight and powerful bills—shows this same impulse towards settling its disputes by means of prolonged wrestling matches.

Kirkman, *British Bird Book* (Vol. IV., page 372), says. "When at close quarters the Gannet makes vicious passes at its opponent with its beak, not to peck or strike but to grasp The beaks once interlocked, there follows a tug-of-war. Both birds may lie flat upon the rock with

their wings outspread and pressed down so as to get a good purchase The contest may be protracted and sometimes ends by both birds falling off the ledge into the sea, where they continue in a semi-submerged state to struggle."

Gurney, *The Gannet*, page 234, also mentions this habit of clenching beaks and fighting in the water as habitual among Gannets.

Thus, of the five British birds selected as particularly well equipped for lethal combat by stabbing, we have seen that three—Grebe, Woodpecker and Gannet—all elect to settle their differences by grappling one another's beaks and then letting the struggle degenerate into a mere trial of strength.

This is not to deny that each or any of these birds ever engage in more damaging combats. In *The Field* of 18th of April, 1903, is an account by Mr. H. Bryden of a fight between two Green Woodpeckers which he witnessed and which contained tragedy enough, one bird being so severely lacerated that it died in a few minutes. No doubt Grebes, too, sometimes fight *à l'outrance*; but such cases, however common or however rare, call for no explanation; they are just what one would expect, being in accord with what is seen in the rest of the animal world.

What then are we to say of the formal encounters such as I have described? Are we to believe that they are indeed examples of an attempt on Nature's part to modify the death-roll attached to sex competition? If so, in these cases, the final aim of the contest has been preserved but its more usual methods of execution have been supplanted by others that appear to be less wholehearted and more in the nature of ceremonial.

Such a perversion, however strongly it may make for the preservation of the race, cannot have been evolved by the individual towards that end.

How then, if Evolution will not afford an explanation, can this transformation have arisen? Was it ordained? If so, by whom? Or is it, like the mode of the knights when competing for the ladies' favours, a conscious expression of common sense on the part of these birds?

These are the questions to which I seek answers.

SOME BREEDING-HABITS OF THE MISTLE-THRUSH IN CORNWALL.

BY

LT.-COL. B. H. RYVES.

As a result of very close and continuous observations of some thirty nests of the Mistle-Thrush (*Turdus v. viscivorus*) during the last eight or nine years, I feel now in a position to record the conclusions reached from them. The nests I refer to were all in or near my garden on the north coast of Cornwall about $1\frac{1}{2}$ miles from the sea. I have been particularly fortunate in that several pairs have nested in sites close to my house, which have been readily visible from some window, and my field-glasses have brought the building and other operations into full and clear vision. Other nests, particularly second and further ones, I have been able to study out of doors for, though classed as shy birds, I have experience of many that have taken little or no notice of my presence at close quarters, thus greatly enhancing the value of my studies. These intensive observations, combined with my previous long experiences of the Mistle-Thrush in the West-country, throw, I believe, accurate light on the habits of the bird.

The earliest date at which a brood has safely left the nest is, in my records, March 30th, but such early cases have been rare. The latest dates are of a bird that began her nest on May 23rd, started incubation on the 30th and hatched late on June 12th. The brood left the nest on the 27th, after which the young birds remained in the garden until July 9th, being regularly fed by the parents.

The exact site of the nest is selected by the hen only a day or two before building starts. A large unshaped foundation is first formed, consisting mainly of twigs, large lichens and coarse grasses, and this becomes a consolidated mass, the various materials being interwoven by feet and wing movements and pressure of the body. Then follows the building of the outside framework of the cup, materials being interlaced between natural supports where they exist and firmly entangled with the foundation at the lower parts and with each other as the structure rises. A large, deep cup has now been formed, the bottom being solid and the sides merely a skeleton. Large quantities of lichen and other available material are then brought and the round wall is thickened to the exclusion of daylight; simultaneously the foundation rises. The next process is the further consolidation of the masses of interwoven materials by a plaster of

a quantity of wet mud and dung. The nest is now ready for the reception of fine dry hay as the interior lining, which completely hides the mud under it. The work is completed! The finished nest is a large and conspicuous one and the cup is somewhat shallow and quite roomy. The hen is entirely responsible for this amazing architectural feat, the cock not assisting in any way at all, though he has been often near at hand during the hours of work and her companion at other times. Early and first nests are usually completed in seven or eight days, the hen generally working for two or three hours daily from about sunrise to nearing mid-day. The first egg may not be laid till a week or more later. No building is normally done in inclement weather. The flight of the hen during building operations is very leisured and slow and somewhat heavy. On leaving the nest for fresh materials and flying downwards, her wings are wide-spread. The eye is at once attracted by this special flight and the site is thus quickly located.

The normal clutch here consists of four eggs, any variation from which must be very rare, for I have no record, out of many scores of nests inspected, of ever having seen more or less than four. The eggs are hatched on the fourteenth day after incubation has commenced. The hen quits the nest for not more than twenty minutes eight or ten times a day to feed herself, the cock accompanying her or she joining him. The cock sings considerably less than he did before the eggs were laid.

The young leave the nest when about a fortnight old. I use the word "about" advisedly because the age varies according to climatic and other conditions. The normal age is fourteen days, but I have records of several instances of the brood not quitting the nest until fifteen and sixteen days old. During the first four or five days of their lives the mother sits on them to a considerable extent, though she constantly leaves them for short periods returning with food. After this she only covers the young occasionally and when nine or ten days old leaves them alone for the night also, except in inclement weather. The cock brings food frequently. For at least a fortnight after the nest is left, the young are fed by both parents and sometimes mainly by the cock.

When a second brood is to be reared, as is sometimes the case, a new nest in a site within the territory is rapidly built about a week after the first brood is on the wing. Such nest is usually finished within three days and the first egg laid

after a much shorter interval. The young of the first nest remain in touch with their parents throughout the rearing of their younger brethren.

The course of breeding by no means always runs so smoothly as above described. Nests are constantly blown down or damaged and the eggs and young consequently destroyed. A fresh nest is very soon built and eggs quickly laid. I have known of many cases of a fourth or even fifth nest being built before a brood is finally reared.

NOTES ON A DISCOURSE ON THE EMIGRATION OF BRITISH BIRDS : 1780.

BY

HUGH S. GLADSTONE.

THE anonymous pamphlet, of which the above eight words form the commencement of its title, has been the subject of a considerable amount of literature*. It is now known to have been written by John Legg (*b.* 1755, *d.* 1802) and is duly catalogued in Mullens and Kirke Swann's *Bibliography of British Ornithology*, but the following notes are of interest.

In a letter to Dr. W. Eagle Clarke, of date January 1st, 1898, the late Professor Alfred Newton wrote :—

" I have never been able to lay hands on the book (published, I believe, in Holland by one *Blum*) which induced Legg to write, nor do I know its exact title, but I have reason to think that it was a theological treatise, and was called " Birds—the Christian's Teachers "—or something of that sort There seem to have been German editions of it as well, though I take the original to have been in Dutch."

Goaded by this reference I have explored the British Museum and other Libraries, but my quest has not brought me to the desired goal.

I possess the following editions of the book :—

- (1) MDCCLXXX : published at Salisbury.
- (2) [N.D. 1780] : published in London.
- (3) 1795 : published in London.
- (4) 1814 : published in London.
- (5) [1814] : as (4) but date erased.

My copy of the first edition is of particular interest since it once belonged to Thomas Pennant, who has written on the fly-leaf :—

" Mostly formed from my works and in other parts very erroneous. T.P."

On p. 27, where it is stated that "*Storks* visit our island in the spring," he has written the word "never!" and he has made the same remark on p. 28; where it is said of the *Crane*: "these birds are found in Lincolnshire, and many other parts of England."

The first three editions were published anonymously—"By a Naturalist"—but the title of the 1814 editions bears the name of the distinguished ornithologist George Edwards. Some have thought that his choice of name was purely guess-work; others, less charitably disposed, have suggested that his name was applied by the bookseller, who printed a new

* See for example :—*The Zoologist* : 1895, p. 147; *Notes and Queries*, May 16th, 1914; *The Field*, February 16th, 1918.

title page to work off the old stock. John Legg was undoubtedly the author. Edwards had nothing to do with the publication; but another peculiarity of the 1814 edition may be noted here, namely, that the date, for some reason unknown, is usually erased.

The title of the book extends to thirty-eight lines and includes a short list of "Birds of Passage" amongst which occurs the strange word "Etotoli" (printed, in the 1780 edition, on p. 22, "Etoboli"). This word has given rise to much speculation: one authority suggests *allodola* or *lodola* (pl. *allodole*, the Italian for "larks") and another, no less convincingly, surmises a printer's error for *et alii*. It is, however, remarkable that in the list of "Errata" (printed on [p. x.] of the introduction) the reader is asked to note that "etoboli" (on p. 22) should read "etotoli," which would seem to indicate that the word was used intentionally, but to what species of bird it refers still remains a puzzle.

It is understood that considerable research was entailed before the anonymity of the author was revealed. On p. 36 of his book, reference is made by him to his projected *New and Complete Natural History of British Birds* of which particulars were to be found in the "Ladies' Magazine, for October, 1779; page 528." Reference to this periodical provides an illuminating clue in the signature to an article entitled "The Natural History of the Nightingale," which is signed "J. ———g, Market Lavington." It may be added that, in a long footnote appended thereto, the History of Birds is promised "in a few months time in possibly not more than two volumes in octavo," but this work was never published and the very manuscript is believed now to have been lost or destroyed.

NOTES

BARK-STRIPPING BY ROOKS.

THE reason for small bare branches on lime trees has always mystified me. But having lime trees on my lawn, close in front of the house, which are used by Rooks, I have found they habitually strip bark off and use it for lining. I have seen a strip laid like a leather binding to the inside of the nest. The only other tree besides lime which I have noticed so used is the tulip tree.

Another noticeable thing is the snippets of elm leaves which strew the lawn at the end of May. This, I take it, is the work of young Rooks experimenting with their beaks as scissors.

E. PEAKE.

FIVE or six years ago I saw some Rooks tearing bark from a lime tree quite near to the Royal Pavilion Rookery at Brighton.

CAMERON SHORE.

THE COLOUR OF THE SOFT PARTS OF THE STARLING.

AN examination of the soft parts of a series of 194 Starlings (*Sturnus v. vulgaris*) over a period of twelve months, with the exception of the month of August, reveals one or two points of interest. In all, 112 males and 84 females were examined.

A study of several standard text books and coloured plates of the species would seem to indicate that the true colour of the beak has escaped notice, and the fact of a definite difference in the two sexes in the breeding-season does not appear to have been recorded, this, by the way, being a far more obvious external indication of sex than is the colour of the iris at this season.

During the breeding-season adult males can at once be distinguished from adult females by the fact that the base of the bill is of a pure French-grey colour, contrasting markedly with the rest which is lemon-yellow. No male yet examined was found to have a uniform lemon yellow beak. In the upper mandible the grey is equal in extent to about the proximal $\frac{1}{4}$, while in the lower mandible its extent is about $\frac{1}{3}$ of the total length. It should be noted also that the gape in males at this season is of a deep grey hue.

In the females during the breeding-season the beak may be uniform lemon-yellow, less bright than in the male, but

are often than not that part of the beak which in the male is grey, in the female is of a delicate flesh-pink. The gape whitish-flesh.

During the moult in late summer and in the autumn the beak becomes suffused with dark olive-green and brown until the uniform dark slate-grey beak of winter is assumed. Though nearly always the cutting edges remain whitish.

From winter back to the breeding-season again is characterised by the gradual replacement of the slate-grey colour by yellowish-white, green and brown, to the lemon-yellow the bird's nuptial dress.

The tarsi of all birds after the assumption of first winter plumage were of a reddish-brown colour, varying in intensity from a vivid light chestnut to a dark red-brown. In the breeding-season the feet appear greyish owing to the fact that the scutellæ are margined with grey.

The males have rich brown irides, but not invariably so, four birds, all adults in winter plumage, possessed typical female irides. This was verified not only from fresh shot specimens but also from the live bird.

In one or two females the light periphery was either incomplete or lacking in intensity.

Juveniles of adult proportions have dark slate-grey beaks with whitish cutting edges; before assuming mature size the upper mandible is brownish and the lower yellowish as the nestling. The tarsi of juveniles are brownish with a distinct purplish flesh tint.

The irides of juveniles are sometimes of the rich brown colour seen in males, sometimes of a mouse-brown hue, much the same tint as the plumage of the head and neck, and at times a stone-grey colour. A sexual distinction was not constantly noted, but males, if anything, inclined to the rich brown colour, and females to the mouse-brown and stone-grey. Juveniles moulting into the first winter: beaks as for juveniles. Irises as in adults. Tarsi also as in adult birds, change which seems to occur even when only one or two feathers of the first winter dress are showing.

First summer birds have soft parts as in adults but less reddened, many individuals having the beak much shaded with greenish or brown.

JAMES M. HARRISON.

EARLY NESTING OF TREE-PIBIT AND LAND-RAIL IN CUMBERLAND.

On April 26th, 1928, a Land-Rail (*Crex crex*) was heard nesting in a small two-year-old larch plantation in north

Cumberland, and on the evening of May 3rd a Land-Rail, probably the female, was flushed from a nest of one egg, whilst on the 11th there were nine eggs, the clutch well hidden in a clump of coarse grass. The male continued craking until the clutch was laid.

In this same plantation on May 8th a Tree-Pipit (*Anthus t. trivialis*) was flushed from a nest of six eggs. R. H. BROWN.

[Clutches of the Tree-Pipit have been recorded from Suffolk on May 6th, 1912, and Shropshire on May 7th, 1903.—F.C.R.J.]

WILLOW-TIT IN DEVON.

ON May 1st, 1928, near Woodbury Village in south-east Devon, I had for some time a pair of British Willow-Tits (*Parus atricapillus kleinschmidti*) under close observation within a dozen yards. The differences between this species and the British Marsh-Tit (*Parus palustris dresseri*) were clearly distinguishable—the rusty-black crown with no trace of gloss, the pinkish-buff sides of neck and flanks, and the pale buff patch on wing.

Curiously enough, while I watched them, these birds, engrossed with their feeding, made no sound.

W. WALMESLEY WHITE.

THREE LONG-TAILED TITS FEEDING ONE BROOD.

WHEN visiting the nest of a Long-tailed Tit (*Ægithalos caudatus roseus*) on May 18th, 1928, I noticed that there were three birds of that species near the nest. After a few minutes watching, each bird went down in turn to the nest and fed the young. I returned to count the young, thinking that possibly two females had laid the eggs and that both were assisting in the rearing of the young. They happened to be just leaving the nest, being fully-fledged, but not more than three had gone and there were eight left, so that the number was not particularly large. I remembered that on March 22nd, the day before I found the nest, I had seen three or four birds at the same spot. I thought they looked as if engaged in nesting, but as there were more than two I thought no more about it. The next day, when I found the nest, I only noticed two birds. The nest was then in the first stages of building. I was away at the time of laying and of incubation, so cannot say how many birds took part in these duties.

JOHN F. WYNNE.

[The presence of one or two birds in addition to the normal pair has been recorded not infrequently in the case of this

species. J. L. Bonhote (*B.B.*, I., p. 32) recorded four Long-tailed Tits at one nest; A. van P. Lechner (*t.c.*, p. 62) also recorded four birds feeding one brood of young. See also *op. cit.*, IV., p. 78 (S. Whiting) and *t.c.*, p. 209 (A. G. C. Tucker); *Field*, 20, IV., 1901 (L. Gray), etc.—F.C.R.J.]

GREAT GREY SHRIKE IN CORNWALL IN JUNE.

ON June 2nd, 1928, I. and three others with binoculars, watched a Great Grey Shrike (*Lanius excubitor*) for half an hour. It was in some wild common land near Mullion, being mobbed by Pipits and Swallows. PHILIP GOSSE.

WOODCHAT SHRIKE IN ANGLESEY.

WHEN near Porth Dalarch on the west coast of Anglesey on June 6th, 1928, my attention was drawn, by the anxious piping of two distracted Hedge-Sparrows on a white-thorn, to another bird which was perched on the top of the bush. At a distance of some fifteen yards I had splendid views through my glasses of the intruder and was pleased to find that the cause of the disturbance was a female Woodchat Shrike (*Lanius s. senator*). It had a buffish-chestnut crown, nape and hind neck, lighter on the forehead, a conspicuous white bar across each brown wing extending to the shoulders where the bar was broadest, mantle and tail brown, chin, throat and underparts white, and a brownish bill. The bird eventually flew on to some palings showing its white rump in flight. No black or brown feathers were visible on the fore-part of the crown or anywhere about the head.

So far as I am able to ascertain this is the first record of the occurrence of the species in Wales.

RICHARD W. JONES.

PIED FLYCATCHER IN SHROPSHIRE AND WORCESTERSHIRE.

ON April 29th and 30th, 1928, a Pied Flycatcher (*Muscicapa hypoleuca*) was in continual song in my grounds along the Howles Valley, alongside which the two counties adjoin. Although this neighbourhood appears to be an ideal haunt for this bird it was not afterwards observed. On May 27th I met with this species at Lydham in Salop, where a pair was evidently nesting within a few yards of the Montgomery order.

J. S. ELLIOTT.

EARLY NESTING OF BLACKCAP AND CHIFFCHAFF.

IN a Surrey wood on April 29th, 1928, I found a nest of a blackcap (*Sylvia a. atricapilla*) containing four eggs. Two

subsequent visits were made on May 3rd and 6th, and on all three occasions the male bird was sitting. A fourth visit on May 12th found the eggs hatched and the young looked fully two days old.

On May 3rd, not a hundred yards away, there was a Chiffchaff (*Phylloscopus c. collybita*) sitting on a clutch of six eggs which appeared to be three to four days incubated.

D. W. MUSSELWHITE.

[Nests of the Blackcap with four eggs have been recorded on April 24th, 1914, near Bristol (*B.B.*, VIII., p. 16), and on April 24th, 1920, in Berkshire (E. E. Pettett). For instances of early nesting of the Chiffchaff (first eggs laid April 23rd–27th) see *B.B.*, VIII., pp. 16, 48, and *Bull. B.O.C.*, XXVIII., p. 85; XXXII., p. 77.—F.C.R.J.]

MISTLE-THRUSH'S NEST ON BREAKWATER.

ON May 4th, 1928, on the coast of Romney Marsh, Kent, I found a nest of a Mistle-Thrush (*Turdus v. viscivorus*). It was built on the top beam of a wooden breakwater about four feet above the sand and between two upright posts bolted together above the nest. At high tide the sea came about ten feet past the nest and the bird used to get drenched with spray from the breaking waves, though the actual water level was, of course, some way below the nest. I have never heard of a similar site.

DAVID L. LACK.

SHORT INTERVAL BETWEEN BROODS OF SONG-THRUSH.

IN the nest of a Song-Thrush (*Turdus p. clarkei*) in my garden in Suffolk, the three surviving chicks were fledged on April 28th. On May 6th the bird was sitting on four eggs in the same nest. At 9.30 a.m. on the 19th there was one newly-hatched chick and four eggs, so that only just three weeks elapsed between the fledging of the first brood and hatching of the second, whilst the first egg of the second clutch must have been laid not more than four days after the previous brood were fledged. Of this second clutch, two eggs were infertile, two chicks died on hatching, and only one is being reared.

CHARLES E. ALFORD.

PROBABLE ISABELLINE WHEATEAR IN CARNARVONSHIRE.

ON May 13th, 1928, whilst examining the Wheatears (*Ænanthe œnanthe*) on the Great Ormes Head, Llandudno, I noticed one bird that was very much lighter in colour than the other

female Wheatears. When I put the glass on it I saw at once that it was a new species to me. I watched it feeding with the other Wheatears within a range of twenty yards. I also saw it resting on one of the numerous limestone boulders and had good breast, side and back views. It was quite as large as the Greenland Wheatears and was both larger in the body and higher on the legs than the Common Wheatears, both of which were present at the time.

Altogether, I had it under observation for over three hours, and when I left it was still there. On my return home, I looked up the plate of Wheatears in Thorburn's *British Birds*, and the one he figures as Isabelline Wheatear (*E. isabellina*) is a similar bird to the one I had under observation. The next day I went to the Manchester Museum and was shown the specimen of Isabelline Wheatear in the Dresser collection by Mr. T. A. Coward. It is in exactly the same plumage as the bird I had seen.

GEORGE F. GEE.

NIGHTINGALE IN SOUTH DEVON.

It was reported to us by Mr. J. L. Dobell of South Efford, Aveton Gifford, south Devon, that there were three Nightingales (*Luscinia m. megarhyncha*) singing in the Aune (Avon) valley between Aveton Gifford and the coast. On May 10th we went to investigate this, and are able to confirm his statement with regard to one bird only. This bird was in full song and we listened to it for more than an hour, between 9.45 and 11 p.m., so that there can be no doubt of its identity. Mr. Dobell himself, though not a naturalist, has long been familiar with the Nightingale's song in other counties.

The bird heard by us has been singing since April 20th in blackthorn thicket overhanging the river near Aveton Gifford. A second bird has been heard by Mr. Dobell about a quarter of a mile below this, and a third in a wood about half a mile below the first. He has heard the first and third singing simultaneously. We were unable to hear either of the birds lower down the river, but we have no doubt that Mr. Dobell's statement is unexceptionable.

In "The Practical Handbook" (p. 470) no record is given of the Nightingale west of the Dart, and, although such records exist, they refer to casual birds. Mr. Dobell has heard the Nightingale near his house almost every spring for the last five-and-twenty years, but never before this year as it stayed more than a few days, generally only two or three. The bird heard by us has now been singing for three weeks and there is no doubt that it is resident there, either unmated

or breeding. There are other birds in the valley, so that the evidence is strongly in favour of the latter.

V. C. WYNNE-EDWARDS.

H. G. HURRELL.

L. MAJOR.

EARLY NESTING OF NIGHTINGALE IN DORSET.

ON May 6th, 1928, one of our boys at Sherborne School, Dorset, found the nest of a Nightingale (*Luscinia m. megarhyncha*) containing four eggs near Sherborne. This seems an early date in view of the cold spring. C. PALMER.

[Mr. A. Collett has recorded a nest with one egg on April 30th, 1893 (*B.B.*, Vol. VIII., p. 49), and Mr. O. V. Aplin one with four eggs on May 5th, 1893 (*Zool.* 1894, p. 97). It is noteworthy that both were found in the warm spring of 1893. On May 1st, 1902, I found a nest with four eggs at Fen Ditton, Cambs.—N.F.T.]

TAWNY OWL AND STARLING NESTING CLOSE TOGETHER.

A TAWNY Owl (*Strix aluco sylvatica*) has nested at Cheadle, Staffs, in a hole in a decayed stump of a tree and the three young ones can be seen in the nest by anyone passing it. A Starling (*Sturnus v. vulgaris*) is seen daily to alight within a few inches of the young Owls with food in its bill for her young, which are apparently in a deep hole in the same cavity in the tree stump as that occupied by the Owls.

One would have thought that the parent Owls would resent this intrusion of the Starlings into their sanctuary. One of the Owls did recently show resentment by striking a passerby a severe blow on the side of his head, which momentarily appeared to stun the bird, as it fell to the ground, but soon recovered and flew away. JOHN R. B. MASEFIELD.

GARGANEY IN WARWICKSHIRE.

ON April 18th, 1928, I saw an adult male Garganey (*Anas querquedula*) with some Teal (*A. c. crecca*) in Sutton Park. This appears to be the first record of the species for the district and, I think, for Warwickshire. B. A. CARTER.

FULMAR PETREL BREEDING IN NORTHUMBERLAND.

ALTHOUGH the Fulmar Petrel (*Fulmaris g. glacialis*) has been reported as haunting various parts of the Northumberland coast during the early weeks of each breeding season since 1919, there has not, so far as I am aware, been any definite

record of its having attempted to breed. This year there is a very large increase in the number of birds and I have already seen eggs on sea cliffs in two different parts of the coast.

GEORGE W. TEMPERLEY.

STONE-CURLEW IN IRELAND.

ABOUT May 16th, 1928, a country boy from Kilkenny brought a Stone-Curlew (*Burhinus æ. ædicnemus*) to Messrs. M. Flanagan, poulterers, of Waterford. Fortunately, I saw it in time and got it. I cannot say exactly where or how the bird was killed, but Messrs. Williams & Son of Dublin confirm the identification and inform me that the last Irish record was in 1884.

A. DOUGLAS DENNY.

A TRANS-ATLANTIC PASSAGE OF LAPWINGS.

WITH reference to the article on this subject in the last number of BRITISH BIRDS and the rather indefinite records of the arrival of Lapwings in Newfoundland before December 20th, I have now received confirmatory evidence from Mr. Gower Rabbitts concerning one of these records mentioned on page 8. Mr. Rabbitts has heard from Mr. J. Morgan of Garnish, stating that the first Lapwing he saw at Garnish was on December 16th and 17th, which was in the week previous to that in which he first wrote. Although Mr. Morgan does not definitely say so this appears to have been a single bird. It is therefore evident that there was a flight of at least some birds independent of the main arrival on the 20th.

The Director of the Meteorological Office, Air Ministry, informs me that conditions of the 16th were not dissimilar to those on the 20th, there being an easterly wind of about 10 m.p.h. along most of the route. The 17th would have been less favourable as the birds would have been taken up to near Greenland.

An indication that there was a general movement of lapwings about the date of the trans-atlantic passage is afforded by Mr. C. S. Bayne, who informs me that on December 15th he and other members of the London Natural History Society saw a large migration of Lapwings in progress in the neighbourhood of Broxbourne, Herts. The birds were passing over in a westerly direction all day. They were in parties varying from five to about a hundred.

It may be mentioned here that Mr. P. A. Taverner informs me that he has had fragments of a European Coot sent to him from Newfoundland, where the bird was taken shortly before March 21st, 1928. This seems to be the first record of the bird's occurrence in North America. H. F. WITHERBY.

LAPWING IN CANADA.

By permission of one of my correspondents, Mr. William Banks of Ottawa, Ontario, I am able to add a record of a Lapwing in Canada to those listed by Mr. Witherby (*antea*, p. 13). In October, 1911, Mr. Banks was in the market in Ottawa, and his attention was called by a French-Canadian to a freshly-killed Lapwing which was hanging up for sale; the man had never before seen a bird like it and asked what it was. Mr. Banks told him, adding that its French name was "dix-huit." Mr. Banks formerly resided near Manchester, and had shot many Lapwings in England and Wales, and in winter in Anglesey had noticed the westward flight towards Ireland during hard weather. He has never seen any other Lapwing in Canada except the specimen in the museum at St. John's, Newfoundland, which is probably the 1905 bird recorded in the *Auk*. T. A. COWARD.

LITTLE STINTS IN CO. DUBLIN IN SPRING.

On May 26th, 1928, on the Strand at Malahide, co. Dublin, Mr. P. E. Dunn and I saw and identified a pair of Little Stints (*Calidris minuta*). In *A Practical Handbook of British Birds* it is stated that there has been only one doubtful spring record of this species in Ireland. We have no doubt about our identification. We had good glasses and we got up quite close. Soon afterwards we came across a flock of about a dozen Dunlins in summer plumage and were able to notice the various points of difference between the two species. P. G. KENNEDY.

RED-NECKED PHALAROPE IN STAFFORDSHIRE.

I HAVE just had reported to me by Mrs. Sneyd of "Woodlands," Cheddleton, near Leek, the occurrence there of a Red-necked Phalarope (*Phalaropus lobatus*) in May, 1926. She identified it at once and accurately described it to me. The bird was caught alive in a greenhouse by her gardener. When released the bird instantly dived into a water-butt, and on coming to the surface again it flew away. Though a somewhat belated record I am anxious to include the bird in our *North* Staffordshire list. A bird of this species was reported from Handsworth in *South* Staffordshire in 1874. JOHN R. B. MASEFIELD.

BLACK-TAILED GODWIT IN LANCASHIRE.

THE note by Mr. A. W. Boyd (*antea*, p. 23) interested me, for April is the only month in which I have failed to observe

the Black-tailed Godwit (*Limosa l. limosa*) in Lancashire. The bird is certainly casual, if not rare, in spring, and my records are few. In addition to the note (Vol. XIV., p. 64) I have the following date for a solitary bird at Ainsdale: May 6th, 1917.

This Godwit has not wintered freely since 1917, and in that severe winter birds were frequently observed up to March 20th. In a few of the ensuing years individuals remained through the winter, but disappeared in the latter half of February. Mid-July to September is apparently the chief passage period, and I believe that the Black-tailed Godwit is a consistent arrival on the west coast in July.

F. W. HOLDER.

ICELAND GULL IN KENT.

ROUGH weather on the south coast always brings Herring and Black-backed Gulls into Romney Marsh at high tide. With them, on April 30th, 1928, the second day of a cold and howery north wind, I saw an Iceland Gull (*Larus glaucoides*).

A Gull, dead white all over, could only have been one of three species and its size, slightly smaller than the Herring Gulls with which it was standing, its comparatively long slender wings and pale yellowish legs, excludes the Glaucous or Ivory Gulls.

I watched it for about half an hour, concealed behind a bank overlooking the marsh, while it preened itself on a mud bank. It later flew up, when the long wings were noticeable, and settled in a patch of grass. Good opportunities of comparison with the Herring Gulls, its neighbours, were given.

April 30th seems a very late date for this bird to be on the south coast of England.

DAVID L. LACK.

[For previous records see Vols. VIII., p. 53; IX., p. 272, and X., p. 263. April 19th seems to be the latest recorded date in spring.—N.F.T.]

ARCTIC SKUA OFF GALWAY IN JUNE.

IN view of the scarcity of occurrences of the Arctic Skua (*Stercorarius parasiticus*) in May and June off the Irish coast, it may be worth recording that, on June 1st when in the vicinity of Inisheer, the southern of the Aran Islands, I observed one.

The day was fine with a fresh east wind and consequent all haze and the bird passed quite close to the boat I was in, flying leisurely north-eastwards.

ROBERT F. RUTTLEDGE.

REVIEWS

Manual of British Birds. By Howard Saunders. Third edition revised and enlarged by William Eagle Clarke, I.S.O., LL.D. (Gurney and Jackson). 3os. net.

FOR years Howard Saunders's *Manual* was the standard authority for British ornithology until his last (1899) edition became too out of date to be so regarded. The present edition we fear falls short in the accuracy sustained in Saunders's own two editions. Even on the first page of the Preface the name of Mr. Grönvold, the well-known bird artist, is spelt Gronwöld, and a number of other mistakes, to some of which we refer later, occur throughout the book.

The form of the work is the same as previous editions, but the plan of devoting to each species exactly two pages (which Saunders himself never approved) is rightly abandoned. The descriptions of young birds are fuller than in previous editions and the measurement of wings is given in millimetres as well as inches. Many additions have been made and newly-admitted species have been illustrated by Mr. Grönvold, whose drawings are cleverly done to match the style of the old ones, notwithstanding the fact that they are reproduced by a different process. In some of the drawings insufficient care has been used to make them comparative in size, so that, for instance, Baird's Sandpiper and the Semi-palmated Sandpiper appear relatively gigantic.

In nomenclature, Dr. Clarke has followed the B.O.U. List of 1915 "with a few desirable exceptions," but why a list of twelve years ago should be preferred to the latest list of the B.O.U., namely that for 1923, and why other names are used is not explained. We cannot trace any consistent plan, and the adoption without explanation of what are now considered wrong names is a useless and totally unconvincing procedure.

In the same way Dr. Clarke rejects certain forms from the list without adequate discussion. For instance, under Crested Tit he states that to which race those obtained in England belonged is "uncertain." As he appears to ignore our article on the subject (*British Birds*, V., pp. 109-10), and does not state that he himself has examined the specimens nor gives any reason for the uncertainty, the statement is valueless. In the case of the Guillemot the author's reason for not accepting *U. t. albidus* is that its distribution is uncertain, yet we have made it quite clear that northern breeding birds are much darker than southern ones and this race has been considered as well differentiated by every ornithologist who has compared a series. The fact that intermediates occur in intermediate localities is entirely natural, and indeed certain ornithologists consider the existence of intermediates to be a necessary condition in a sub-species as opposed to a species. Although Dr. Clarke thus excludes *P. c. cristatus* and *P. c. mitratus*, specimens of which have been critically examined by others, yet he adds the Western Little Bustard (*Otis t. tetrax*), although not a single example of this form taken in the British Islands has been identified. In fact, he seems to have made no critical examination of existing specimens of this and other birds such as Spotted Eagles, one of which, stated to have been shot in Aberdeenshire September 20th, 1861, is additional to those listed in *British Birds*, XIV., pp. 180, 209.

There are many details in the book to which we take exception, and there are also certain records which do not appear to have been published previously, and it must suffice to refer here to a few of these items. Under Continental Jay the first Kent occurrence is omitted, and Norfolk should be five and not three. Coues's Redpoll is recorded from Fair Isle, May 5th, 1908, which appears to be a fresh record, while three obtained there in 1910 are put down as 1920, and two recorded from Norfolk in 1910 and 1926 are omitted. The Yellow-breasted Bunting is recorded from Fair Isle in September in 1907 and 1909 and at St. Kilda in 1910. We suppose these escaped identification until after the publication of Dr. Clarke's *Studies in Bird Migration*, since they are not mentioned there and no explanation is vouched. The supposed breeding of the Snow-Bunting at Flatholm in the Bristol Channel in May, 1911, is, we are sorry to see, solemnly accepted as a fact. Had the supposed female taken at the time and stated to have had a well-developed ovary been examined by Dr. Clarke, he would have found it to have been an undoubted adult male. The Great Tit, Blue Tit, Coal-Tit and Long-tailed Tit are given as breeding at Tornoway in the Outer Hebrides. Five examples of the Continental Coal-Tit are recorded for Norfolk in October, 1891, but no details are given and it is impossible to accept such a record without evidence. The occurrence of Eversmann's Warbler in Norfolk in September, 1922, is omitted, as are those of the Scandinavian Chiffchaff at Holy Island in April, 1923, although we believe the latter were identified by Dr. Clarke himself (see *British Birds*, XVIII., pp. 19-20). The occurrence of the Siberian Chiffchaff on the last-named island is given as October, but the correct date would appear to be November 10th (*loc. cit.*). The date of the first Dusky Warbler, obtained by Dr. Clarke himself and originally given as October 3rd (*Scot. Nat.*, 1913, 271), is now stated as October 1st. We can only suppose that the original date is the right one, as no indication of a correction is given here. The Indian Stonechat is stated to have been exhibited to the B.O.C. by Mr. G. F. Arnold, by whom it was shot, whereas it is shown by Howard Saunders on behalf of Mr. E. C. Arnold. The nest of the Alpine Swift is described as being a saucer-like structure composed of mud," whereas it is like that of the Common Swift. Among the few quotations in the book that from the *Zoologist*, under Red-tailed Swift, contains two mistakes, the year and page being given as 1847 and 1496 instead of 1846 and 1492. The introductions of the Little Owl made by Mr. St. Quintin (not Quentin as printed) and Lord Rothschild did not, we believe, have any influence on the subsequent distribution of the bird in England. The date of the Lesser Frigate in the Scilly Isles, given as February 24th, 1925, should be 1926, but another was seen in May, 1925. Of the Osprey it is said that a pair may have survived until 1926 and that, if rumour is to be relied on, a pair nested in the Highlands in 1916. The Great Bustard is said to remain some time unable to fly when moulting, but we believe this to be a fiction which might well have been expunged from this edition. The occurrence of Bartram's Sandpiper in Scilly in September, 1922, the omission of which from the *Practical Handbook* was pointed out in *British Birds*, XVII., p. 259, has escaped Dr. Clarke's notice. The nesting of the Greenshank in the lowlands in 1925, and perhaps also in 1924 (*Scot. Nat.*, 1925, p. 107) is not referred to. In the appendix a record of the Continental Blue Tit is referred to as the second British occurrence, whereas two others are already given in the text of the work.

Enough has been indicated to show that the work contains many errors, which is a pity as most could have been avoided by more careful proof reading. As a consequence, this edition cannot be pronounced reliable and owing to the lack of reasons for opinions expressed it cannot be accepted as authoritative. The advice given in the preface that trinomials should be retained for birds which were so described but need not be used in other cases is a very unsound doctrine and shows a lack of perception of the nature of the system. H. F. W.

Birds of the Ocean. By W. B. Alexander. Pp. xxiv., 428, 140 illustrations. 1928 (Putnam). 25s. net.

The perusal of many bird books of the present day leaves the reviewer in great doubt as to whether there can be any object in their publication, beyond the satisfaction of the author. In this case, however, we have a book written with a definite object which certainly fills a very decided gap. It is handy and compact, profusely illustrated with photographs and diagrammatic sketches by the author and arranged on a plan which should greatly simplify the identification of any of the birds which are likely to occur during a voyage in any part of the world.

In order to keep the book within reasonable compass it has been necessary to compress the paragraphs on distribution very strictly. Even such a local species as the Caspian Tern is said to breed "in various parts of N. America, Europe and Central and Southern Asia (*H. c. caspia*)". As the Common Tern is described as nesting "across Europe and Asia from the British Isles to Mongolia (*S. h. hirundo*)," it would have been better to qualify the former statement by the words "very locally."

On the whole, the distribution has been very carefully worked out, though there are occasional slips. Ross's Gull is said to breed "in Western Greenland, Spitsbergen and Northern Siberia." The only known breeding place is in the Kolyma Delta. The Great Skua is said to breed in Labrador and Greenland, but the evidence is far from conclusive, and Kumlien's accounts of the nesting habits of this bird and the Pomatorhine Skua are contrary to all experience on the part of other ornithologists, and require confirmation.

In his treatment of the Yellow-legged Herring-Gull, Mr. Alexander follows Dr. Dwight, but, like him, omits all mention of the birds which breed along the coast of Portugal and northern Spain. The Glaucous Gull nests in large numbers on Bear Island and also off the North Russian coast, while on the American side it breeds south to Newfoundland as well as in the localities mentioned.

The diagrammatic sketches of birds on the wing are extremely useful, as the wing pattern is in many cases a valuable field character, too much neglected in our handbooks. Our only regret is that these sketches are not more numerous.

The derivation of Malle-muck as given on p. 5 is quite erroneous; the true meaning "mad fly" is obscure, but any one who has seen the hundreds of white specks sailing apparently aimlessly to and fro before the face of some vast cliff, will be struck, as were the old Scandinavian and Dutch sailors, by their resemblance to a swarm of dancing gnats.

We can heartily commend this little book to all who are interested in bird life and have the prospect of a long sea voyage before them.

F. C. R. JOURDAIN.



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NOTES ON THE BIRDS OF PUFFIN ISLAND.

BY

W. ASPDEN.

OFF the extreme eastern point of Anglesey known as Penmon or Head of Mona, and marking the eastern entrance to the Menai Straits, lies the small island of Priestholme or Puffin Island.

This little scrap of land, some two-thirds of a mile long and half that breadth, has from time to time received considerable attention from eminent naturalists including ornithologists of repute. It is therefore possible, owing to the notes made by such observers, to compare existing conditions with those pertaining to the past. Amongst such early references are the ones made by Oliver Goldsmith in his *History of the Earth and Animated Nature*, published first in 1774, wherein he states with reference to the Puffins that their numbers may be likened to swarms of bees, and also cites the island as one of the noted breeding haunts of the Guillemot. It is, however, with later and more modern observers that I have been able to make comparisons. I do not propose, however, to make, in these notes, more than a mere reference to one or two features which seem of interest respecting the changes brought about on the island by the increase of certain species of birds.

About forty years ago the Liverpool Marine Biological Society had a station on the island, and in 1891, when the Society transferred its activities to the Isle of Man, the station was handed over to the University College of North Wales at Bangor. The station was active from 1892 to 1897 and during that period published bi-annual reports. Professor Newstead, now of Liverpool, visited the island in 1895 and published a list of the birds he noted.* An interesting footnote to the list reads as follows :—

“ *The almost entire absence of cover gave the birds little or no chance of concealment and it is doubtful therefore if a single species was overlooked at the time of the visit.* ”

There is certainly no *absence* of cover to-day and each season sees an increase. The Monks who inhabited the Priory on the island grew as a pot herb the common Alexanders (*Smyrnium olusatrum*), and this plant has remained down the centuries. For many years before the War a small herd of goats inhabited the island, and these served to keep the upper surface and the slopes clear of cover, even cropping the few stunted elder bushes which are the only trees on the island. When the

**Report of the Puffin Island Biological Station, 1894-5, University College of North Wales, Bangor.*

Biological Station was working the Alexanders were practically confined to the south-western corner of the island, and mainly on the slopes. Now quite half the upper surface is also covered with a breast-high growth of the plant, along with considerable quantities of common hemlock (*Conium maculatum*) and patches of nettle (*Urtica dioica*).

The goats have gone, and so a positive check on the plants is removed, but the great increase in the numbers of the Herring-Gull (*Larus a. argentatus*) and the Lesser Black-backed Gull (*Larus f. affinis*) has, I think, provided a positive aid, especially to the Umbelliferæ.

Wherever these two species of Gulls nest on the upper surface of the island the close turf of tiny, dwarfed and close-growing plants is soon worn away by the constantly alighting birds, and the subsequent scramblings of the young, and the soil is laid bare. The umbelliferous plants seem to have the power of colonizing these bared patches before the smaller plants can re-establish themselves, and in consequence the island is rapidly becoming covered with a thick growth. This means that the area inhabited by Puffins (*Fratercula a. grabæ*) is being restricted, as that bird prefers a clear front exit to his burrow. The Puffin once was the dominant bird here but has now lost that place to the Herring-Gull. This latter bird really seems to prefer open situations for nesting, but the Lesser Black-backed Gull shows a very decided liking for cover. I have noted this at another large gullery in Anglesey where the two species nest together.

The egg-stealing habits of these two Gulls are well known and I doubt if there is much to choose between them. There is, however, a difference of some three weeks between the nesting time of the species in most years, and the Herring-Gulls are, as a rule, well started before the Lesser Black-backed Gulls begin to build. During this period there is bitter strife between them, but when both have eggs they turn their attention to the Guillemots (*Uria a. albionis*) which frequent the north-western cliffs.

The Puffins in the vast majority of cases make use of burrows in the turf of the upper surface, but many use holes in the cliff faces, which being of carboniferous limestone provide a multitude of crevices.

When the young Gulls begin their wanderings they often get into the Puffin burrows and this is strongly resented. I have seen a Puffin, dragging a Gull chick, emerge from its burrow, and the chick was just killed and quite warm. "Tommy Noddy" can bite cruelly hard.



GUILLEMOTS ON PUFFIN ISLAND.
On uncrowded ledges the birds adopt the prone position when incubating.
(*Photographed by W. Aspden.*)



LESSER BLACK-BACKED GULL ON PUFFIN ISLAND.
In June the vegetation attains a height of 4 to 5 feet, and provides very effective cover to the majority of nests of this species.
(*Photographed by W. Aspden.*)

The Guillemots are in some hundreds on the narrow ledges, but they congregate in their greatest numbers in two low caves some distance down the cliff. The caves run back a good way but the roofs are so low as to prevent a human being getting far in. The floors of these caves are paved with eggs, far back beyond sight, and it is only when the birds pour out, like water from an opened sluice gate, that one can get an idea of the numbers of birds using the place for breeding. Most visitors to the island can have but little conception of the numbers present, as they cannot be seen without going down to the caves.

I have long been intrigued by the statements made by professional cliff-climbers that they are able to say with a high degree of certainty just where a particular type of egg will be found each year and Puffin Island seemed to me to provide an opportunity for testing this statement. I therefore selected two small portions of accessible ledge, whereon I found certain uncommon and well-defined types of eggs, making sketch maps and carefully marking the positions of the chosen eggs. I took careful notes and chose ten specimens. This was in 1925.

In 1926 I kept watch on these two places and six of the specimens were duplicated. In no case was an egg more than eighteen inches from the position of its prototype of the previous year. One case was particularly interesting. The 1925 egg was of the common blue colour, but uncommonly marked with white blotches outlined with black, giving the impression that the white patches had been outlined in ink. In 1926 there were *three* eggs of that particular type all close together. This raises an interesting point: Do the daughters inherit the colour scheme from the mother? This may be perhaps solved by further observations and the use of rings.

In 1927 five of the eggs were duplicated eventually, though my observations were temporarily broken down by a collector. Fortunately I met him leaving the ledge and he very kindly showed me what he had got, a brown egg and a white with red scribblings, which were like two I had plotted on my maps. One of the eggs was replaced in less than seven days, but this was much less heavily pigmented, though undoubtedly laid by the same bird. I have known a bird to lose three eggs and still lay a fourth. There can be little question that a considerable number of Guillemots do return year after year to the same place for egg laying, and even to the same part of the same ledge.

The statement is often made that this bird always sits upright on its egg when incubating. This is by no means the case and applies only to crowded ledges. The majority of Guillemots when there is room adopt the same position as any other bird, *i.e.*, prone upon the egg. The photograph of the group of birds taken on an open ledge where they are not too crowded shows this clearly and my own observations over some years bear it out. When a ledge is very crowded and an individual has literally to fight its way into the crush, then the upright position is the only one possible, and facing forwards to the cliff-face is a necessity to avoid being pushed off from behind.

Razorbills (*Alca torda*) are quite as numerous as the preceding species but are not confined to the western face. They are, however, somewhat restricted on the opposite side of the land owing to lack of suitable sites. On many little overhanging ledges Razorbills and Guillemots may be seen sitting together on their eggs and showing no dislike for each other's company.

Shags (*Phalacrocorax a. aristotelis*) are scarce but regular visitors, and I found one nest in 1926 on a cliff-face within a few feet of the nest of a Raven (*Corvus c. corax*) in which there were three half-grown young. The Shag had also three young and was particularly assiduous in guarding the nest. In the turf above the Raven's nest there are often dismembered corpses of Puffins, but I am inclined to attribute this to the visiting Greater Black-backed Gulls (*Larus marinus*), a bird which does not nest regularly on the island, though I have found the nest twice and seen the birds frequently. Like the Raven I think takes toll of the carrion but is not responsible for the killing, in spite of Stanley's *Book of Birds*.

A small colony of Cormorants (*Phalacrocorax c. carbo*), about half a dozen pairs, nest at the foot of the western cliff but they are sadly harassed by trippers.

About the Kittiwakes (*Rissa t. tridactyla*) the same tale is to be told, and not more than a couple of dozen pairs now breed on the island.

A list of other species, none of which are numerous and some confined to one or two pairs, may be of interest, and covers the nesting species*.

Jackdaw (*Colinus m. spermologus*)—A little colony in rock-crevices at the south-eastern corner.

Starling (*Sturnus v. vulgaris*)—A few pairs in the ruined buildings.

Edge-Sparrows were also resident on the island in 1910. (F.C.R.J.).

- Meadow-Pipit (*Anthus pratensis*)—Common but decreasing.
Rock-Pipit (*Anthus s. petrosus*)—Common.
Song-Thrush (*Turdus ph. clarkei*)—Three nests noted.
Blackbird (*Turdus m. merula*)—Two nests noted.
Wheatear (*Ænanthe æ. ænanthe*)—Not numerous.
Sheld-Duck (*Tadorna tadorna*)—Varies in number, but nests
most years high up on the cliff edge in rabbit burrows.
Stock-Dove (*Columba ænas*)—Two or three pairs only.
Oyster-Catcher (*Hæmatopus o. ostralegus*)—About six to
eight pairs annually.

AN AUTUMN HABIT OF THE ROOK.

BY

REV. E. U. SAVAGE.

THERE is a habit of the Rook (*Corvus f. frugilegus*) which seems to me to call for some explanation and investigation. My observations have been confined to Cumberland and Westmorland, and it would be interesting to know whether the habit has been observed in other counties.

In August and September, and generally, but not always, on warm and sunny days, the flock assembles in the air. Inspection shows that the birds are in pairs, and more or less keep so, toying with one another and performing aerial "stunts," the favourite being wild headlong tumbles earthward through many hundreds of feet.

This performance is accompanied by not unmusical notes, particularly a guttural bubbling note which is never heard at any other time, and is quite distinctive of these displays. The earliest date I have heard the note is August 11th. After the performance in the air the flock generally descends to a grass field, where the birds sedately stand or walk about in pairs, cawing and bowing to one another.

During August and particularly in the early part of September the habit becomes more general and frequent, until, as my notebooks for the last three years show, it happens daily from about September 12th, working up to a great climax about 18th. This is a really magnificent display. The Rooks soar to a tremendous height, and are invisible to the naked eye, then fall headlong as if shot, dashing, falling, playing with one another, uttering all the while the argling bubbling cries and also shrill notes like those they make when mobbing a Kestrel. The whole display is accompanied by a loud and continuous chorus of cawing. This goes on for more than an hour until the flock settles in the roost, where the usual din is kept up for some time.

After the big display there are only desultory efforts confined to a few pairs, sometimes only one pair performing. Birds with feathered and unfeathered beaks perform, the latter predominating. The same thing occurs at a large roost in Cumberland where the birds are in thousands and at a small roost here in Westmorland of about fifty pairs. The question arises do Rooks pair in the autumn, and are these displays a part of their courtship? If not, how are they to be accounted for?

OBITUARY.

ANNIE CONSTANCE MEINERTZHAGEN
(née JACKSON).

It is with the deepest regret that we have to record the death of Mrs. Meinertzhagen, which occurred as the result of a terrible accident at Swordale, her estate near Evanton, Ross-shire on July 6th, 1928.

Colonel and Mrs. Meinertzhagen had been engaged in revolver target-practice and while returning to the house Mrs. Meinertzhagen was examining her revolver in the belief that it was empty ; this, however, was not so and her husband, who was walking ahead, was startled by an explosion and turning round saw his wife fall ; and she was found to be dead.

In such tragically sudden fashion has the ornithological world been deprived of an accomplished and valuable worker, both in the field and the museum, and those who were privileged to know her, of a true and charming friend.

Mrs. Meinertzhagen was the elder daughter of the late Major and Mrs. Randle Jackson of Swordale and was born on June 2nd, 1889. She developed a taste for natural history at an early age and birds soon became her favourite study. After schooldays she and her sister, Miss Dorothy Jackson, the entomologist, took a three years' course in zoology under Professor E. W. Macbride at the Imperial College. Meanwhile her work in the field, which commenced with photography, had turned to observing and collecting, and for many years she took a special interest in waders and ducks. Her collecting was done in a strictly scientific way and she skinned most of the birds herself. This material proved of the greatest value when she came to work out the plumages and moults of her favourite groups for *A Practical Handbook of British Birds*.

As Miss A. C. Jackson she contributed many valuable faunal notes to the *Annals of Scottish Natural History*, commencing in 1909. These included the occurrence of such rarities as the Yellow-browed Warbler and Scarlet Grosbeak in Ross-shire ; the breeding of the Gadwall, Pintail and Great Crested Grebe in Moray ; the occurrence of the Barred Warbler and Greenland Redpoll in Tiree, where she spent the autumn of 1913, and other observations of considerable interest.

Her first contribution to *British Birds* consisted of a useful short article on the mouth-coloration of nestlings in November 1908. Subsequently she wrote a series of valuable articles on the moults of British ducks and waders, and these studies

formed the foundation of her later and more complete work contributed to the *Practical Handbook* on the plumages of these birds. Her methods were very thorough, and she not only examined all available material in this country, but also studied for three weeks Dr. E. L. Schiöler's magnificent collection of ducks in Copenhagen. It was while in the midst of this work for the *Handbook* that she became engaged to a brother ornithologist, Colonel Richard Meinertzhagen, whom she married on March 3rd, 1921. To fulfil a promise, and not to delay the publication of the *Handbook*, she and her husband spent the first part of their honeymoon working at birds in Lord Rothschild's Museum at Tring.

In 1915 Miss Jackson was elected an Honorary Lady Member of the British Ornithologists' Union, and to the *Ibis* of that year she contributed, jointly with Dr. E. Hartert, an article on certain waders. Recently Mrs. Meinertzhagen published in the same journal "A Review of the sub-family Scolopacinae," Part I. (1926), and "A Review of the family 'Cursoridae'" (1927). She also made several communications to the British Ornithologists' Club, at the meetings of which she was a frequent attendant. But in recent years the needs of a growing family (she leaves three young children), to whom she was a very devoted mother, prevented her from doing so much ornithological work as before, though her keenness for the subject never diminished. Our sincerest sympathies are extended to her husband and family in their bereavement.

H.F.W.

JOHN PATERSON.

By the death of John Paterson at Glasgow on June 20th, 1928, the Clyde district has lost its greatest authority on its fauna. Fortunately his store of information is available in many contributions to publications of the local natural history Societies and to Scottish natural history journals and proceedings and in his note-books and correspondence. His many friends, and ornithologists generally, deeply regret that he could never be prevailed upon to write a book on the subject of Clyde birds; it would have been a worthy supplement to Robert Gray's pioneer work on the *Birds of the West of Scotland* (1871). The present writer knows that the late A. Harvie-Brown many years ago suggested that Paterson should take in hand the Clyde volume for his great series of "Vertebrate Fauna of Scotland," but this is still amongst the things to be accomplished.

Any attempt at a list of Paterson's published writings would be a lengthy document. His first published bird-paper appeared in the *Annals of the Andersonian Natural History Society* (1893), and his earliest notes in the *Annals of Scottish Natural History* are found in the volume for 1895. This connexion has been kept up all along and there are three notes from him in the *Scottish Naturalist* for March-April, 1928, pp. 52 and 61. Occasional notes were also contributed to *British Birds*. He edited the first parts of the *Glasgow Naturalist*, a publication generally recognized to be far superior in contents to similar local journals. For five years, 1904-8 (inclusive), the annual "Report on Scottish Ornithology," published in the *Annals of Scottish Natural History* (1905-9), was compiled by him, and his sagacious and brief prefatory remarks to each Report are models of what was necessary. His most comprehensive work is the section on Birds in the "*Fauna, Flora and Geology of the Clyde Area*" (Glasgow, 1901, pp. 159-170)—Handbook for the Meeting of the British Association at Glasgow, 1901—an admirable and concise list. It is now being brought up to date for the Meeting of the same Association at Glasgow this year (1928), and Paterson was co-operating in compiling the card catalogue, revising and supplementing the list.

John Paterson was one of the class of field naturalists, now becoming scarce, whose interests were widespread, and amongst other groups he had a good working knowledge of botany, mycology and entomology. During the last few years a well-earned leisure from a fully occupied business life permitted him to pay several visits to southern Spain, and a collection of plants made by him in the spring of 1927 was destined for the Botany Department of the British Museum, South Kensington. He also recently gave a paper on the "Birds of Andalusia" to the Andersonian Naturalist Society, Glasgow. Of this Society he was in earlier days one of the Secretaries and later on President, and he also had filled the office of President of the old-established Natural History Society of Glasgow. His membership of the Gilbert White Fellowship, London, was a sure indication of his own predilections.

He is survived by his wife and a daughter and son; two younger sons fell in the War (1914-1918)—Alick and James (both 2nd Lieuts., The Cameronians)—losses which he bore with characteristic equanimity and fortitude but which undoubtedly clouded his later years.

HUGH BOYD WATSON

NOTES

"BRITISH BIRDS" CENSUS OF HERONRIES.

We have already received a number of completed schedules for which we tender our thanks. There are, however, still many to come in and we shall now be glad to receive them. The name and address of the observer should be written on the schedule.

THE EDITORS.

CROSSBILLS BREEDING IN HAMPSHIRE AND DORSET.

IN early April, 1928, a pair of Crossbills (*Loxia c. curvirostra*) were building a nest at the top of a Scots pine in Bournemouth. I took my friend Dr. F. G. Penrose to see the birds and the nest and as I had to leave the neighbourhood he made further observations, and noted a young bird at the spot in June. There may have been more nests as there were at least three pairs of old birds in the clump of trees in April. T. S. Fox.

As the Crossbill (*Loxia c. curvirostra*) has apparently not been definitely recorded as breeding in Dorset, the following details seem to be worth recording.

On April 9th, 1928, a Crossbill's nest was found in a pine tree on a heath in east Dorset, not far from the Hants boundary, a few miles north of Bournemouth. The nest then contained dead young birds, but the old birds were still about and had begun to build again. The male was in red plumage. On April 22nd the new nest was finished and contained a clutch of three eggs.

Mr. W. J. Ashford (*Br. B.*, XXI., p. 154) remarks that of the scores of Crossbills observed by him in Dorset in 1928 one was in the red plumage. It is interesting to find that the only breeding record should be that of a red male.

F. C. R. JOURDAIN.

WOODCHAT IN DORSET.

A WOODCHAT (*Lanius s. senator*) was shot in a garden on Portland on June 23rd, 1928, and shown to Mr. A. Blinn, who lent it to me. Mr. H. F. Witherby, who did not receive the bird until the 28th, managed to make a skin of it and reports as follows: "It was an adult female of the typical race. The ovary was somewhat developed, and it might have finished laying or it might not have laid." There appear to be only two previous definite records for the county—in one case the bird was killed and in the other seen only.

F. C. R. JOURDAIN.

COCK NESTS OF THE GARDEN-WARBLER.

It is many years since I first noticed that when looking for the nests of Garden-Warblers (*Sylvia borin*) I found a number of beginnings of nests in the bushes around. These are just about the size of the palm of the hand and are a thin flat layer of the same kind of straws as are used in a proper nest, but no cup shape is ever reached. They are placed in similar positions in the briars to a proper nest.

A year or two later* I found that the cock Common White-throat (*Sylvia communis*), if without a female, made, not only one nest, complete except for finer lining, but a series of nests, one of which would be completed by the female if she arrived. This made me more desirous to get further data about what seemed cock nests of the Garden-Warbler.

The Garden-Warbler is very shy except when you are near the young, and, as it perches under the leaves, and its flight is a lightning flash, especially in undergrowth, it is nearly hopeless to expect to see the male building. I once saw a bird building what turned out to be one of the dummy nests, but I took no particular notice as I was not then aware of the habit. Notwithstanding many efforts I never had convenient or favourable circumstances for finding any further useful information till this year (1928), when I found two fairly early cock Garden-Warblers not far from where I live in co. Fermanagh. This was on May 12th and there were already some of the dummy nests made. I may say that there is no mistaking them for last year's dummies, as even this year's dummies get bedraggled and discoloured or fall away in heavy rain within a month or so. I cannot prove that the females had not arrived, but there is the inference as I saw none, and the cocks continued to advertize themselves on the higher trees and there was no alarm from either till May 23rd, when both of them alarmed.

By that time I had already counted about twenty dummy nests to each territory, in fact nearly every suitable briar clump had one. I had marked each of them by a piece of paper. One of the territories I could not study so well, as it had a dwelling-house in it, and between human interference and other circumstances I have not yet located the nest but a brood was reared. The nest seems to be near the house but the undergrowth is too overgrown to find the nest at present. In the other territory the nest was made *on one of the dummies* which I had marked, in fact on the dummy in the clump I should have recommended.

* *Irish Naturalist*, Oct.-Nov., 1918.

The nest was found nearly complete except for finer lining on May 26th. It had not been begun on the 23rd when I heard the first alarm. I think, therefore, we may fairly conclude that the cock makes these dummy nests and that the female may use one of them. I may add that there was practically no song from either cock during incubation and until the young were fledged. J. P. BURKITT.

ROBIN'S EGGS HATCHED AFTER DESERTION.

PERHAPS the following record I made in 1924 may be of some interest, proving as it does that eggs can remain fertile for a very long period.

On April 5th a Robin (*Erithacus r. melophilus*) laid her first egg in her nest built in an old saucepan that I had specially placed for the benefit of the pair of Robins that always nested in that particular territory at Mawgan-in-Pydar, Cornwall. On April 6th and 7th the second and third eggs were laid, after which the nest was completely deserted. On April 22nd a fourth egg was laid and on April 26th there was a total of eight eggs, when the hen commenced incubation. On May 9th the eight eggs were all hatched and on May 23rd eight healthy nestlings left the nest. Both parents continued to feed the young birds for a considerable time and reached a great state of emaciation. B. H. RYVES.

CUCKOO AND TREE-PIPIT'S NEST.

WHILE at the foot of a Westmorland fell on May 25th, 1928, a Cuckoo (*Cuculus c. canorus*) flew past me and settled in a tree 100 yards away, where she sat hunched up for six or seven minutes. She then glided from the tree, passing within a few yards of me, pursued by a Tree-Pipit (*Anthus trivialis*) and alighted on the fell side 45 yards away on an open space and two feet in front of a patch of dead bracken. Then she appeared to sit up on her tail—a curious erect position—with her back at right angles to the ground, and supporting herself on the tips of the wings which were extended forward. A few seconds later she stepped back, apparently picked up something in her beak, approached the bracken, put her head, neck and shoulders inside, her tail and back never being out of my sight, backed out and then flew past me again. As she went by I plainly saw, through the glasses, an egg in her beak. During the time she was on the ground, about twelve or fifteen seconds, a pair of Tree-Pipits fluttered frantically around her. I went to the place and found a Tree-Pipit's nest containing two eggs and a Cuckoo's egg, which was warm. (A

third Tree-Pipit's egg was laid next day.) The nest was placed seven inches under, and was so covered by, the bracken that I could only with difficulty get my hand into it, and my doing so brought down a lot of bits of dead bracken into it.

E. U. SAVAGE.

CUCKOO LAYING IN NESTS OF WOOD-WARBLER AND BLACKBIRD.

ON May 29th, 1928, a nest of a Wood-Warbler (*Phylloscopus s. sibilatrix*) was found in a wood near the Hants border in east Dorset which contained, in addition to a clutch of six eggs, an egg of the Cuckoo (*Cuculus c. canorus*). The eggs were fresh but the nest showed no signs of damage and the Wood-Warbler was incubating when found. In England this is one of the rarest fosterers and few cases are recorded, but out of 17 cases on record by Čapek in Mähren no fewer than 13 resulted in desertion by the fosterer. F. C. R. JOURDAIN.

ON June 10th, 1928, at Coat, near Martock, Somerset, I found an egg of the Cuckoo in a nest of a Blackbird (*Turdus m. merula*). The nest contained four foster eggs in addition to the Cuckoo's.

JOSEPH H. SYMES.

[Only about twelve cases are known in which this fosterer has been victimized, six of which are mentioned in the article on the Cuckoo in Kirkman's *British Bird Book*.—F.C.R.J.]

MARSH-HARRIER IN DEVONSHIRE.

ON July 9th, 1928, I had a magnificent view of a male Marsh-Harrier (*Circus æ. æruginosus*) flying slowly over the east Devon links at Budleigh Salterton. Once it dropped into a thicket of gorse, and as it rose again its distinctive characters were unmistakable. A few moments later the Harrier soared to an immense height and disappeared southwards over the sea.

In the early part of December, 1925, a large Hawk was seen on these same links, which from the very exact description given to me I feel sure was also a male Marsh-Harrier. The weather at that time was rough and the bird was probably storm-driven; at any rate it seemed weary and stayed about the links for two or three days. W. WALMESLEY WHITE.

HERONS AND CARRION-CROW.

DURING one of my periodical visits to the Heronry at Penrhyn Park, Carnarvonshire, in connection with the census, I noted a Carrion-Crow (*Corvus c. corone*) behaving in a very excited manner as I approached the site. The bird was some forty

yards away from the clump of trees used by the Herons and, when I arrived under the first nest, three Herons flew off from the branches *below* the nest. Stuck in a crotch of a limb were the very draggled remains of a Carrion-Crow, and feathers were still floating in the air when I saw it.

Unfortunately I was too late to see the whole incident, but there was no doubt that the Herons were busy with the Crow when I arrived and I can only surmise that they had caught it raiding a nest, or at any rate suspected its intentions. Its mate kept at a respectful distance but appeared more concerned over the tragedy than over my presence.

WM. ASPDEN.

HERON SWALLOWING SNAKE.

ON May 26th, 1928, a friend and I were walking along a "drove" on the Somerset peat moors when our attention was directed to a Heron (*Ardea c. cinerea*) standing in the grass of a meadow which abutted on the drove; it was easy to see that the bird was engaged with something in the grass, and a moment or two later its head was thrown up in the air with a grass snake quite two feet long dangling from its bill: with two or three gulps the bird swallowed the snake whole. Eels occur here in the larger rhines but are usually small. I mention this, as any suggestion of the creature being an eel may be dismissed, as we were too close to the bird to allow the possibility of such a mistake, and partly hidden by alder bushes we were stationary before the bird's head was raised.

STANLEY LEWIS.

TUFTED DUCK BREEDING IN BERKSHIRE.

ON May 4th, 1928, I put up a pair of Tufted Duck (*Nyroca fuligula*) from a small pond about ten miles on the Berkshire side of Hungerford. Being unable to spend any length of time looking for a nest, I decided to wait until the young might be fairly well grown, and on June 23rd I put them up from the same place with four or possibly more young ones.

S. T. C. TURNER.

[For a previous record of Tufted Ducks breeding in Berkshire see *British Birds*, XV., p. 117—EDS.]

GOOSANDER AND WHOOPER SWAN IN LATE SPRING IN WORCESTERSHIRE.

I WAS interested to see Mr. Betts's notes on birds seen at the north Worcestershire reservoirs during the past twelve months (*antea*, pp. 19-20). Having been abroad nearly all that time, my own observations on the birds of the reservoirs have been interrupted. But I should like to add an appendix

to Mr. Betts's observations of Goosanders (*Mergus merganser*) during the past winter. On May 17th. 1928, I had a good view of a brown-headed bird of this species on the Upper Bittell. On May 1st. with Messrs. F. R. Barlow and J. D. Wood, we had thought we saw one diving repeatedly far out in the water, but we did not identify it for certain. On May 21st a female Wigeon (*Anas penelope*) was present on the Lower Bittell.

I think I omitted to record that on May 11th, 1924, during the afternoon, while I was at the Upper Bittell reservoir, three Swans came flying round, and two of them settled on the water. To my surprise they proved to be Whoopers (*Cygnus cygnus*). I sat down on the bank with my companion, Mr. R. Gibbins, and the Swans gradually drifted across till they were within fifty yards of us. Nor were they disturbed when we got up and walked along the side of the reservoir. One was an adult bird with rusty-coloured head, the other immature.

H. G. ALEXANDER.

FULMAR BREEDING INLAND IN MORAY.

IN connection with the recent extension of the breeding area of the Fulmar Petrel (*Fulmarus g. glacialis*) it may be worth recording that I noticed, on a recent visit to Scotland, a small colony of these birds breeding in the Moray area.

A point of particular interest, however, is the fact that the colony is not on the sea cliffs, but is situated in a sandstone ravine a mile or so away from the sea.

This ravine though precipitous in places is neither so high, nor are the breeding places so difficult of access as those I have seen in other localities.

Some half a dozen birds were actually incubating on the date of my visit, June 3rd, 1928, and many others were preparing to do so. Many were sitting in small cavities in the sandstone, although one or two had their eggs on more open ledges.

It would be interesting to learn whether any other breeding colony of these birds is known which is similarly situated out of sight and sound of the sea.

B. GUY HARRISON.

LIST OF BIRDS OF THE FORTH AREA.—In the *Scottish Naturalist*, 1928, pp. 5-15. is published a list of the birds of the Forth area, denoting in tabular form with the aid of symbols the general status of each species in each county. This was compiled by the late William Evans, who was working at the birds of Forth for years before his death in 1922. An appendix by Miss Baxter and Miss Rintoul gives additions to this list down to the end of 1927.

RAVEN NESTING IN TREE IN DUMFRIES-SHIRE.—Mr. H. S. Gladstone states (*Scot. Nat.*, 1928, p. 26) that a *Corvus corax* built a nest about twenty feet above the ground in a larch tree at the head of Dalwhat Water. There was an apparently suitable crag half a mile distant. The nest was said to have contained five eggs, but these had been destroyed when Mr. Gladstone visited the spot on May 5th, 1927.

DECREASE OF TREE-SPARROWS IN SCOTLAND.—Miss Baxter and Miss Rintoul point out (*Scot. Nat.*, 1928, p. 25) that *Passer montanus* has ceased to breed in certain parts of Fifeshire, on the Isle of May, on Fair Isle and on Bute, and appeal for information regarding the status of the bird in other parts of Scotland. Mr. D. Hamilton gives details of its status round Edinburgh (p. 37).

EASTERN SHORT-TOED LARK AT FAIR ISLE.—Surgeon-Rear-Admiral J. H. Stenhouse records (*Scot. Nat.*, 1928, p. 16) that a Short-toed Lark obtained by Mr. J. Wilson at Fair Isle, Shetland, "on October, 1927," has been determined by Dr. Hartert as belonging to the greyer eastern race *Calandrella brachydactyla longipennis*. The bird was not sexed, but was probably, by the wing-measurement of 92 mm., a male. This is the second recorded occurrence of the bird at Fair Isle, but it has not yet been detected elsewhere in the British Islands.

MISTLE-THRUSH'S NEST ON A FENCE.—With reference to Mr. D. L. Lack's note (*antea*, p. 40), Mr. H. G. Alexander informs us that on April 11th, 1926, he and his brother, Mr. W. B. Alexander, found the nest of a Mistle-Thrush on the top beam of a wooden fence, one side against a post, by the railway line between Lydd and New Romney, in Romney Marsh. The nest contained four eggs.

GARGANEY BREEDING IN THE FORTH AREA.—Dr. J. Ritchie gives a full account (*Scot. Nat.*, 1928, pp. 77-80) of the breeding of a pair of *Anas querquedula* in the Forth area in 1928. A bird apparently of this species was first seen in mid-April by Mr. Usher. On the 21st, Messrs. J. Kirke Nash and P. J. C. Macgregor saw a drake which they identified, and on May 5th Mr. Nash saw the drake with two ducks and on the 26th with one duck. Meanwhile, on May 12th, Mr. W. Short had found in the same locality two "Teals'" nests and one of these was photographed on May 15th by Master Brotherton—a school-boy. On this date the eggs were hatching. It was not until June 11th that this news chanced to reach Mr. Nash, who then proceeded to the spot with Mr. Short and Dr. Ritchie and

removed what remained of the nest and down to the Royal Scottish Museum. The down and feathers were found to be characteristic of those of the Garganey and so the fact of breeding was satisfactorily proved. It seems probable that two pairs nested. Hitherto the Garganey has been known only as a rare straggler to Scotland. It may be mentioned that Garganeys were exceptionally numerous in Norfolk in early April this year.

COMMON SCOTER WITH YOUNG IN ORKNEY.—On August 4th, 1927, Miss E. V. Baxter had a very good view of a duck, *Oidemia nigra*, with three half-grown young near Finstown (*Scot. Nat.*, 1928, p. 28). Miss Baxter considers they must have been hatched somewhere in the Orkney group, where this bird has not been recorded as breeding.

SURF-SCOTER IN FIFESHIRE.—Prof. D'Arcy W. Thomson states (*Scot. Nat.*, 1928, p. 25) that in St. Andrew's Bay early in January, 1928, he found a specimen of *Oidemia perspicillata* drowned in a fixed cod-net. The bird had been washed about for days in a storm and was unfit for preservation. The sex is not stated.

AMERICAN BITTERN IN CORNWALL.—Mr. F. W. Frohawk records (*Field*, 16-2-28, p. 256) that an example of *Botaurus lentiginosus* was shot by Mr. E. W. Willyams on November 28th, 1927, on Goss Moor near Bodmin. On December 30th another Bittern, identified as of the same species, was seen on the same moor. The stomach of the bird killed contained the remains of several smooth newts.

A TRANS-ATLANTIC PASSAGE OF LAPWINGS.—In further reference to this subject (*vide antea*, pp. 6-13 and 43) Mr. H. F. Chittenden informs us that at Seaford, Sussex, on December 18th, 1927, Lapwings in large flocks were observed heading straight out to sea southwards. The weather was very cold with a strong east wind.

Mr. G. C. S. Ingram informs us that while re-writing his notes a few days ago he was struck with the fact that on December 18th, 1927, he recorded that during a visit of one and a half hours duration to the Llanishen Reservoir, near Cardiff, three flocks numbering twenty-four, six, and sixty respectively, passed over, all heading due west. Lapwings, he states, are *very* rarely seen in winter in that district, and so the occurrence of three flocks in such a comparatively short space of time was considered sufficiently unusual to

be recorded, and evidently—in the light of subsequent events—was part of the great movement which took place about that date.

SPOTTED REDSHANK IN BUTE.—The Rev. J. M. McWilliam records (*Scot. Nat.*, 1927, p. 189) that he shot a *Tringa erythropus* at Loch Fad in Bute on September 27th, 1927. This is an addition to the author's *Birds of Bute*, but the bird has been observed a good many times in Renfrewshire.

BLACK TERNS IN HERTFORDSHIRE, BUCKINGHAMSHIRE AND MIDDLESEX.—An unusual number of Black Terns (*Chlidonias n. niger*) appeared on passage at the Tring and Weston Turville reservoirs on May 4th and 5th, 1928, as we learn from Mr. C. Oldham, who saw altogether on three reservoirs some eighty of these birds on May 4th, while on the evening of the 5th Miss R. G. Blezard counted fifty-six on one of the Tring reservoirs and states that the birds had left the next day, the 6th. On the 4th there were also a number of Common Terns (*Sterna hirundo*) and a few on the 5th and 13th.

Mr. W. S. Taylor also informs us that on May 3rd he saw five Black Terns at the Kingsbury (sometimes called the Neasden) reservoir, Middlesex.

Mr. Oldham informs us that the direction of the wind on the 4th and 5th was a little north of east.

LETTERS.

NUMBER OF EGGS LAID BY MISTLE-THRUSH.

To the Editors of BRITISH BIRDS.

SIRS,—I am surprised to find in *BRITISH BIRDS* of last month the statement [p. 32] by Lt.-Col. B. H. Ryves that, in spite of his long experience, he has never found the nest of a Mistle-Thrush in his district containing more than four eggs.

In some parts of Lancashire and Yorkshire where the Mistle-Thrush is a common bird, even close to large manufacturing towns, I must have examined hundreds of nests from early schooldays to 1924, and though I admit that four eggs is the usual complement, I must have seen about thirty fives, and can well remember the only set of six eggs in a nest built on a gravestone in Greenacres Churchyard, Oldham. I think that localities may influence egg-laying. My experience with the Ring-Ouzel in Derbyshire has been that I have never known a nest with more than four eggs; yet many fives are found annually on the Pennines in some parts of Lancashire.

JOHN ARMITAGE.

[It is, of course, a well-known fact that clutches of five eggs occur occasionally in the case of this species. Major W. M. Congreve (*Br. B.*, XVI., p. 105) has recorded an instance where four out of six nests in Denbighshire contained five eggs in 1922. What is now needed is an analysis of all records from different localities in order to discover

whether the variation from the normal is due to local conditions or exceptional seasons, and tabulated *series* of records of full sets from different districts would probably throw some light on this question.—F. C. R. JOURDAIN.]

LARGE CLUTCH OF EGGS OF GREEN WOODPECKER.

A Correction.

To the Editors of BRITISH BIRDS.

SIRS,—On page 76 of Volume XX. of *British Birds* I recorded the finding of a nest of the Green Woodpecker (*Picus v. virescens*) containing the practically unprecedented number of nine eggs. This was at Savarsin, Rumania, and just outside the S.W. boundary of Transylvania. At the time of this find I did not know the Grey-headed Woodpecker (*Picus c. canus*), but, suspecting its possible presence, I carefully observed the occupant of the nest-hole and at once saw it had red on its head. I never for a moment suspected that I might be looking at a male *P. canus*, which of course has red on the fore-crown, all red being absent in the case of the female. Twenty days after I found and took the nest, I shot a female *P. canus* in the same locality, but it had a very pronounced incubation patch, laying had been completed and, at the time, I saw no connection between this bird and the large clutch of eggs, since I imagined it was a bird that had laid, sat on, and presumably hatched its eggs.

I have now got to know *P. canus* extremely well as the result of two months spent in Transylvania (1928), and have definite proofs that the males have large incubation patches some weeks before incubation commences and also that they take a large share of the incubation duties.

Finally, the eggs of the nine clutch of 1926 are practically similar in size to eggs of *P. canus* found in 1928, and are smaller than any eggs of *P. v. virescens* that I have ever seen. I must therefore regretfully own that I almost certainly made a mistake in identification and the record can no longer stand.

W. M. CONGREVE.

HAFOD, TREFNANT, 26th June, 1928.

REVIEWS.

Birds of Glamorgan, 1925. (*Transactions of the Cardiff Naturalists' Society.* Vol. LVIII., pp. 39–84). Compiled by a Committee of the Cardiff Nat. Soc. and obtainable separately from the Hon. Sec., National Museum of Wales, Cardiff. 2s., 2s. 6d. boards.

THE old List of the Birds of Glamorgan published in 1900 by the Cardiff Naturalists' Society has long been out of date and extremely difficult to obtain, so we are very glad to welcome the present List, which shows a great advance on its predecessors in many respects.

It is very concise, and all references to previous records are as far as possible given from the *Trans. Cardiff Nat. Soc.* Unfortunately, series of the publication are as a rule inaccessible except to local workers, so that it is difficult to trace many of the early records, even when they have also appeared in the pages of the *Zoologist* or similar well-known publications.

Apart from this drawback, the work seems to have been very carefully compiled, and we are glad to find a full and unbiassed statement of the facts with regard to the supposed instance of the breeding of the Snow-Bunting at Flat Holm in the Bristol Channel in 1911, which

has unfortunately been given fresh publicity in the new Edition of Saunders's *Manual*. As the List is dated 1925, all subsequent records have been added in footnotes, which must be read carefully in conjunction with the text of the List in order to obtain a correct idea as to the present state of the county avifauna.

There is still a good deal of work to be done in the way of exploration of the interior of the county. Thus, under the heading of Ring-Ouzel, it is stated that the species used to breed at the head of the Rhondda Valley and may still do so occasionally, as a pair were noted there in 1916, etc. It is twenty years since I visited Glamorganshire, but the Ring-Ouzel was then common quite close to the industrial areas, and in the course of a few hours one could hear the somewhat monotonous songs of half a dozen males.

Probably a closer acquaintance with the wild country north of the coal-producing districts would alter the views of the authors with regard to this and other species.

Of the Common Buzzard it is said that twenty years ago it "had been practically exterminated in the county, and the nest with two eggs found on April 29th, 1900, was probably one of the last attempts to breed until after 1914," when it returned to some of its old haunts. From personal experience I can state positively that this was not the case. In 1906, 1907 and 1908, there were at least two pairs of Buzzards (as well as Peregrines and Ravens) breeding in close proximity to the thickly populated industrial districts. It is quite true that in the second and third years of the war, when game preservation had temporarily ceased, there was a great influx of raptorial birds into many districts long untenanted, but it is very doubtful whether the resident birds were ever in danger of extinction.

Under the heading of Storm-Petrel it is said that no definite record of an occurrence in the county can be traced since 1838. This is surprising as one was picked up alive in Cardiff on October 14th, 1881 (*cf. Zool.*, 1881, p. 489).

We are glad to notice that the nomenclature and scientific order have been brought into line with the requirements of the present day.
—F. C. R. JOURDAIN.

Report of the Cambridge Ornithological Club on the Birds of the Cambridge District and Field Work of the Members of the Club, 1927. Edited by F. S. Chapman. (Cambridge University Press 1s. 6d.)

THOUGH its University has in the past served as the nursery of so many ornithologists, Cambridge is still one of the counties that lacks an adequate history of its bird fauna. There is a vast amount of spade work awaiting anyone who undertakes the task of writing it and it is to be hoped that the newly-formed Cambridge Ornithological Club has this task in view as one of the chief objects of its activities. It is eminently a move in the right direction that Cambridge should have followed the lead of her sister University in the formation of such a Club, and it is all to the good for the promotion of efficiency and continuity in its work that membership is not confined to members of the University. Some useful papers appear to have been read at the Club meetings and these must serve to stimulate the activities of the younger members. We naturally, however, look chiefly at what has been done towards collecting information with regard to the local fauna. Notes on this subject occupy the greater part of this first Report and many of them recall very familiar scenes and experiences of the past. It is particularly

gratifying to learn that two pairs each of Short-eared Owl and Montagu's Harrier reared broods in Wicken in 1927. It will be interesting to see in the future whether either species will increase, though it is to be doubted whether the area is large enough to hold more. The probability of the Water-Rail breeding is hinted at, and quite likely correctly, but one hopes that actual proof may be forthcoming ere many years are past. The same applies to the Teal and Shoveler. Further, more exact details of the present status of the Grasshopper-Warbler seem desirable, for if the very scanty notes given approximate to anything like the truth, the bird must have very seriously diminished in the last thirty years. The notes on the Sewage Farm are a useful beginning, and if regular observations could be carried out over a series of years some valuable light might be thrown on the cross-country migrations of the waders. The remainder of the Report is taken up with three short papers on birds observed on Edge Island in the Eastern Spitsbergen Archipelago, in Surendal, Norway, and in Shetland. The first of these is the only one of importance, as no bird observations appear to have been made on this remote island previously. The other two are hardly more than lists and are of but very slight utility. In conclusion one must congratulate the Club on its hopeful start and, while wishing it every success in the future, hope that the present modest beginning may continually expand until observations come in regularly from the whole county, so that reliable material may be some time available for an authoritative county avifauna. N.F.T.

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THE OFFICE OF MASTER OF THE SWANS.

BY

N. F. TICEHURST, M.A., F.R.C.S., ENG.

THE chief official who was responsible to the Crown for the care of the royal Swans and for the general supervision of Swan-keeping throughout England was called the Master of the King's Game of Swans, or, shortly, the Master of the Swans. When exactly this post was created we do not know, but in quite early times certain of the duties appear to have been carried out by other officials having a purely local jurisdiction. Thus we find the Sergeant of Kennington seizing certain cygnets on behalf of the King in 1246, and John Russell, John Chidiok and Giles de Bello Campo supervising the royal birds in Wiltshire in connexion with their post of Bailiff and Keeper of the royal forest of Clarendon in 1276, 1327 and 1344 respectively. During the same period such offences as stealing and killing Swans and taking their eggs, frequently combined with park- or warren-breaking, fish-poaching and deeds of violence, were dealt with as individual cases, as they arose, by the appointment of persons by commission of oyer and terminer on complaint of the aggrieved party. The calendars of the Patent Rolls contain many instances of such procedure.

Later on, offences against the laws and orders for Swans were dealt with in the special courts of Swan-mote, presided over by Commissioners and Justices appointed for the purpose in different areas, by letters patent under the Great seal. It was part of the Swan-master's duties to bring all such offences before the notice of these courts. The earliest appointment of Commissioners that I can find is entered on the Patent Rolls for 1463.

By inference a certain Thomas Gerveys was exercising the functions of Swan-master in 1355, for in that year Edward, the Black Prince, appointed Simon de Biflet and Nicholas de Mideford to keep all his Swans in the water of Thames between London and Oxford *by the supervision and advice of Thomas Gerveys*. The earliest definite appointment recorded, however, is that of Thomas de Russham on May 3rd, 1361, in the following terms (translated from the abbreviated Latin) :—

“ The King to all and singular his Sheriffs, Mayors, Bailiffs, Ministers and others of his faithful people, as well within the liberties as without, to whom [this writing shall come] greeting. Know ye that we have granted to our well-beloved and high-borne Thomas de Russham

the supervision and custody of all our swans as well in the water of Thames as elsewhere within our kingdom for as long as it shall be our pleasure. So that he shall answer to us for those swans as well as for the profits and issues from the same arising and further that according as it shall be necessary to take carriage for those swans as well by land as by water the same shall be promptly paid for from our monies. And accordingly we command you that you may be diligent in consulting and helping the same Thomas in the making and performing of the premisses as often as and according as the same Thomas by you or any one of you on this account shall have cause to be made secure on our behalf. [In testimony] of which, &c. Witnessed by the King at Westminster on the third day of May [1361].

By the King himself on the information of William de Wykham." (*Rot. Pat.* 35 Ed. III., pt. II., m. 27.)

It was manifestly impossible for one man to exercise proper authority throughout England and it soon became necessary for deputies to be appointed to act for him in different districts. Although answerable to him, each deputy's authority was supreme in his own area. The earliest mention of such a deputy occurs in the appointment of Richard Braunche as keeper of the King's Swans on the river Thames and all other rivers in England in 1378, where John Holbrook is named as his deputy. The latter succeeded to the senior post in 1393. Five such deputies exercising functions in defined areas are mentioned in the Act of Resumption of 1 Henry VII. (1485). Later still they became more numerous and were appointed to supervise single counties and even single rivers; for instance the Broadland area of Norfolk and Suffolk, the county of Surrey, the Holland division of Lincolnshire and the river Witham each had their own deputies. So far indeed was the sub-division carried in some instances that we find Thomas Herwood signing himself "vice-deputie" for "Ramsey streame" (Hunts) in 1612.

The following notice, extracted from *The London Gazette* for October 22/25, 1683, shows how the deputies were appointed later still:—

"Whitehall, Octob. 23.

His Majesty having been pleased to Grant unto the Honourable Bernard Grenvile Esq., Groom of His Majesties Bed-chamber, the Office and Place of Master of his Majesties Game of Swans within the River of Thames, and all other places within the kingdom of England. These are to give notice to all Persons that have had formerly Deputations from the Earl of Manchester, deceased, that they repair to Mr. Grenvile's house, in York Buildings in Buckingham Street, who is the Person empowered by His Majesties Letters Patents, to make Deputies in the Office aforesaid."

The Duchy of Lancaster appointed its own Swan-master, who performed the same duties within the liberties of the Duchy manors as the royal Swan-master did outside, and

ranked equally with him, though he was not allowed to up, mark, or sell any birds, even within his own jurisdiction, without the supervision of the latter, who in turn could not do any of these things within the liberties of the Duchy, unless the former was present.

Though I am unable to find what the emolument was, the Swan-master was no doubt at first a working official with a definite salary, for in the appointment of Richard Stanes in 1410 it is mentioned that his fees, wages and other profits were to be the same as those of his predecessor John Van, deceased, while John Wode was appointed in 1461 "with fees as in the last year of Edward III. and the first of Richard II." Whether the salary continued, or not, I cannot say, but as the number of deputies increased the chief post became more and more of a sinecure. At first the deputies were appointed, as we have seen, like their chief by the Crown itself, but by the sixteenth century the Master appointed them and the posts were farmed out to his friends or to the highest bidder. At the same time the Mastership gradually became a post of profit under the Crown and the status of the holders gradually rose until the position became one of extra emolument for some favourite or high official of state who drew his profits from the rents he charged his deputies. These in turn derived theirs from the legitimate fees of their office with a gradually increasing encroachment on those that belonged by original right and usage to the Crown itself.

This system of farming out the deputyships is well illustrated by the two letters of Lord Buckhurst to Sir William More in 1593 that have been printed in Kempe's *Loseley Manuscripts* (pp. 305 *et seq*). There is no need to re-print them here, but the interesting points are that Sir William obtained the deputyship for Surrey through the influence of his daughter, who had married Sir John Wolley, the Latin Secretary to the Council; that "the ancient rent" of the post was £10 per annum, which out of friendship Lord Buckhurst reduced to forty shillings; and the final sentence of the first letter which reads, "If I may understand of your desier to have this graunt of Surrey for the swans, I will send you a draught in paper of the same graunt in suche sorte as al the rest of the Sheres are graunted," showing that his was only one of many similar rentings. In the second letter the various sources of revenue of the deputy are enumerated, but these are best deferred until after a consideration of the legitimate fees of the post.

The Swan-master's fees allowed under the various codes of Orders were the alienation fees of 6s. 8d. payable by every owner on succeeding by inheritance, purchase, or otherwise, to each mark and game of Swans ; 4d. per annum as a registration fee for every mark registered in his book or roll, and the same for every new mark added (by order of Swan-mote at Wisbech in 1587 the fee for entering a new mark for that district was altered to 6s. 8d. and for any additions to an existing mark 2s. 6d.) ; 4d. from each owner at the annual upping for keeping the upping book ; 4d. for making entries in the same of any matter other than he was obliged by the Orders to enter and the same for furnishing a certified copy of any entry in it or on his roll of marks ; 4d. for the allowance of each man present at the upping as the representative of an absentee owner ; a penny for each white or grey Swan upped and two pence for every cygnet ; half of the fine of 8d. levied on any owner attending the upping without his Swan-hook ; 4d. from any owner wishing to take up a Swan at any other time than during the upping ; his dinner, supper and horse-fodder on each of the upping days and power to levy a fine of a shilling on any owner who left the upping before it was finished or before settling his debts. In default of payment of any of these fees or fines the Master had the power to seize one or more cygnets, belonging to the debtor, at the next upping and sell them, returning any money left over, after paying himself, to the owner.

The other profits which were ultimately allowed to the Master and his deputies are thus enumerated by Lord Buckhurst in his second letter to Sir William More :—" For all straie swans, all swans unmarked, all wild swans, all tame swans that fly, all swans of felons, owlawed persons or traitors, and many other, are the master of the swans right. He is also to have xijd. for every growne bird* and al ameracements and penalties that shalbe inflicted for any offenses w^h at any sessions for swans shalbe set upon them, and many other rights and benefits belong to the master of the swans." In addition he was also responsible for the preservation of wild-fowl and fish within his area and any fines inflicted for illegal hunting and fishing also went into his pocket. The post therefore must have been quite a profitable one and though ten pounds, which was a large sum in 1593, would appear to be a high rental for an area like Surrey with only

* *i.e.*, ground- or land-bird. The bird awarded at the upping, from each brood, to the owner of the ground on which the nest had been built. Under the Orders the recipient had to pay a shilling to the King.

about thirty owners (the Thames being expressly excluded) the appointment must have been well worth it.

After all there was probably a good deal of common sense in this delegation of Crown profits to the Master and his deputies; they must have been a great incentive to the efficient carrying out of their duties and so promoted the preservation of the birds, though, at the same time, temptation to abuse and oppression must have been considerable.

In return for these emoluments the duties of the Swan-master were many and at times no doubt onerous. His primary duty was the care of the royal birds and the maintenance of the Crown rights, which incidentally involved the supervision of Swan-keeping by all private owners. The duties therefore may be considered under three headings: (1) the maintenance of the royal prerogative; (2) the preservation of the birds themselves; (3) the safeguarding of the rights of private owners and the prevention of fraud.

Under the first heading it was his duty to seize all unmarked, foul-marked, or double-marked birds, all strays, unpinioned birds whether marked or not, those with marks of unknown ownership, all birds whose owners had not the necessary property qualification or who had not paid the alienation fee, all birds belonging to felons, outlaws or persons under attain, and the cygnets of any Swans whose ownership was unknown or doubtful. That justice might be done, he was under a penalty to impound for a period all such seized birds in a pen or pit within twenty feet of the common stream or highway that they might be inspected by possible claimants and restored to such owners whose claims proved good. Otherwise they became the property of the Crown and were sold, or marked with the royal mark. As we have already seen most of these confiscated birds in later years became a perquisite of the Master or his deputies.

Under the second heading the duties consisted mainly in seeing that the penal clauses of the various sets of Orders (see Vol. XIX., p. 186) were enforced, such as the prevention of illegal hunting, fowling and fishing, the disturbance of nesting birds, the stealing of eggs and the killing of birds, and he was responsible for bringing all offenders before the Swan-mote Courts. In addition, however, it was also his duty to see that all weirs were fitted with grates, to prevent the cygnets from being swept over and drowned; to see that wakes were kept broken in the ice in winter and that the birds were collected and properly tended and fed in times

of drought, flood or prolonged frosts. In connection with the latter duties the particulars of every bird rounded up had to be booked and an account kept of all expenses incurred in this and their subsequent care and feeding. These were recoverable from the several owners in proportion to the number of each man's birds collected, with power of distraint, in default, at the next upping.

Most of the duties in connection with the protection of owners' rights are also enumerated in the different sets of Orders, but may be summarized shortly. He had to be present at the taking up or sale of any unmarked cygnet and at the sale or delivery to a purchaser of any adult Swan. Sales by unauthorized persons and the counterfeiting and altering of marks to any owner's loss were provided for under the penal clauses of the Orders, and for the detection and punishment of offenders under these he was of course responsible.

Most of the formalities so carefully laid down for the conduct of the annual upping were also designed for this end. In preparation for the days set apart for this ceremony the Swan-master was responsible for all the arrangements. He had to see that proclamation was made in all market towns within his area, of the day, hour and place of meeting. He had to arrange for the attendance of fishermen and other boat-owners, with their boats, and of men to row and to wade. On the upping days he, or an authorized and sworn deputy for him, had to be present to supervise the whole proceedings. He had to bring with him his roll of marks, the book in which he had to enter the details of all the birds caught, where they were caught, their parentage, marks, owners and how they were divided, and the book in which these details of the previous year had been entered. He also had to keep a similar full account of all birds sold, together with the purchasers' names and the prices paid. Before commencing proceedings he had to make a roll-call of all the owners and note all absentees who were unrepresented and then to read aloud, and allow or disallow, the authorizations to act as deputies for absentee owners and to see that these and all attendant swanherds possessed the necessary qualifications and were not acting for more than the permitted number of owners. He also had to arrange beforehand for the dinner and supper of the entire company, where these were to be partaken of and to collect the money for them and pay the bills. Nothing could be done in rounding up and catching the birds without his orders and no pinioning or marking

could be commenced unless he was actually present and had satisfied himself as to the ownership of each parent and had divided the brood according to the ancient custom. Marking finished, the brood was not to be turned loose again until he had given the word and until the owners of the parents had in his presence plucked a bunch of feathers from the backs of the old birds' heads. This was probably a method of temporarily marking the birds, as a means of knowing that they had already been dealt with and to save unnecessary re-catching.

Mention has been made of the fact that it was possible for a Swan-master or his regular deputy to be represented (in case, say, of illness) at the upping by an authorized and sworn deputy. This person had to be chosen from amongst the Gamesters, *i.e.*, Swan owners. Provision was also made for adjudication in cases of doubtful ownership or in other difficulties by means of a small panel of owners to act as the Master's assessors and these were sworn for each case as it arose. The oath, which was known as "the Gamester's Oath" is recorded in MS. 8021 in Chetham's Library, Manchester, a roll of Thames marks of early Elizabethan date, as follows:—

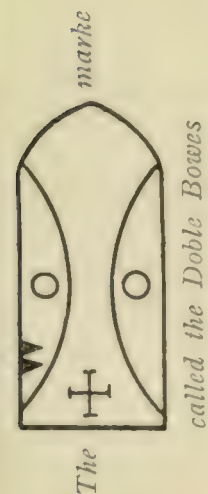
" THE GAMESTER'S OATH.

You shalbe of good behaiour toward the game of Swans, wherin you shall not do any harme, suffer to your power any to be done. Neyther medle with or take up any swans or Cicnett without speciall warrant or lycence from the Master of the game of swans or his deputy. You shall true knowledge give unto the Mr. of the game or his deputy, of all manner of offences and misdemeaures whatsoeuer committed and done against the game to your knowledge: And shall truely obserue and do all auncient lawes and customes heretofore used by the gamesters of the said game of swans so neere as God shall geue you grace."

Mention has also been made of the attendance of owners by deputy and how their authorizations had to be approved by the Swan-master and a fee of 4d. paid him for the same. These, known as "deputations," were very formal documents and both for their quaintness and rarity are worth publication. I have only seen two examples, of which the following is the earliest. It is a holograph document on a single sheet of paper, somewhat imperfect, the witness clause is unreadable and the seal has been cut away. It is the property of the Rev. H. S. Marriott to whom I am indebted for the loan of it. The many abbreviations in the original have here been extended and one or two words, missing through imperfections in the paper, have been inserted in square brackets.

"QUARTO XIII. JULY A^o DNI 1599.

Knowe all Menn present and to come that I Mathie Walsingham of Refcham in the Countie of Norffolk gentleman haue made constituted appoynted and in my place putt my Wellbeloved in Christ John Mann of upwell the elder yoman xxxxx my trewe and lawfull Attornye for me in my name at my vse to vewe take vpp & to mark all such Swannes and signetts as be unmarked or be to be marked with this mark in the Margent or proper to me in anye wyse whersoever this mark doe or shull appere within the Ille of Elye Countye of Cambrydge or Norffolk and the rightes and dewties belonginge to the seyme to performe for me in that sort that the Aunchent Custome of Swanners requyreth gyvinge and grauntynge vnto my seyde Attornye my full power righte and lawfull authoritie herin for theis yeares the on towe & three and forteth of the quenes Majesties raigne in as ample and lardege manner and forme as yf my selfe wer ther



personallie present and whatsoever my seyde attornye [and] deputye shull happen to doe or cause to be done herein I doe promyse promyst to allow ratysie and establyshe. In Wytnes herof I have sette my [hand and] seale the daie and yeare fyrst aboue wrytten by me Mathrain Walsingham."

The Swans bearing this mark were almost certainly inhabitants of the Fenland about the Norfolk-Cambridge border, between Upwell and Wisbech, a long way from Reepeham where their owner resided. Hence the necessity for him to appoint a deputy.

Annexed is a list, as complete as I have yet been able to make it, of the holders of this office and some of their deputies. It has been compiled from a large number of sources, but there are probably a good many gaps still to fill in, particularly after the middle of the sixteenth century, since the Calendars of the Patent Rolls, from which the majority of the earlier appointments have been obtained, have as yet only been published up to the end of the reign of Edward VI.

SWAN-MASTERS AND DEPUTIES.

- 1355. Thomas Gerveys, apparently acting on the Thames.
- 1361. Thomas de Russham appointed for the Thames and all other waters in England, during pleasure, May 3rd.
- 1377. John Drayton of Bensyngton appointed for the Thames and cos. Kent, Surrey, Sussex, Middlesex, Essex, Hertford, Southampton, Wiltshire, Oxford, Berkshire, Buckinghamshire, Lincoln, Somerset, Dorset and Gloucester, during pleasure, July 24th.
- 1378. Richard Braunche appointed as Thomas de Russham, Dec. 12th. John Holbrok to be his deputy.
- 1379. Walter Payn appointed as Thomas de Russham, Feb. 20th. Alexander de Barton, ditto, July 16th.
- 1388. Ralph Scote, ditto, Dec. 1st.

1393. John Holbrok appointed for the Thames between the Bridges of Oxford and Windsor and all its affluent and effluent waters, within and without warren, during pleasure, June 26th.
1400. John Fenne appointed for the Thames and Lodene, from Oxford to Queenhithe, during pleasure, March 18th.
- 14(?) . John Van appointed for the Thames and all rivers, streams and members of the same, from Gravesend to Cirencester (died before June 1st, 1410).
1410. Richard de Stanes, "the King's servant," appointed during pleasure *vice* John Van, deceased, June 1st.
1433. John Norman, "groom of the robes," appointed as Richard Stanes, Dec. 8th.
1461. John Wode, "the King's servitor," as Richard de Stanes, but for life, April 12th.
1468. Richard Forster was holding the appointment of Bailiff of Whittlesea Mere, Cambs., and supervisor and approver of all Swans on any mere or water in cos. Huntingdon, Cambridge, Lincoln and Northampton in this year and also in 1472.
1470. Richard George, "esquire," appointed as Richard Stanes, Dec. 22nd.
1478. John Hampsterley, "one of the yeoman ushers of the King's hall," appointed to the custody of the Swans within the Lordship of Warwick, during the minority of Edward, son of George, late Duke of Clarence, May 2nd.
1482. John Barlo, "one of the groom porters of the household," appointed as John Hampsterley, Oct. 27th.
1483. Thomas Hopton, "esquire, the King's servant," appointed Bailiff and Warrener of Marlowe, co. Bucks., with the custody of the King's Swans, for life, April 16th.
1485. Gilbert Gilpyn, "King's servant," appointed "to the office of the Swans and Master of the game on the Thames and its streams and creeks," for life, Sept. 23rd. Appointment continued by Act of Resumption, Nov. 7th, 1485.
- David Phillip held the offices of Steward of Fotheringhay, etc., etc., and Master of the King's Swans for Huntingdon, Cambridge, Northampton and Lincoln in 1485 and was confirmed therein by the same Act of Resumption.
- John Faunt held office as Bailiff of Whittlesea Mere and supervisor and approver of all Swans on any mere or water in cos. Huntingdon, Cambridge, Lincoln and Northampton and was confirmed therein by the same Act of Resumption.
- John Depden held office as Bailiff of Soham, Cambs. (Duchy of Lancaster) and "searcher of the water with the Swannship there," and was confirmed therein by the same Act.
- Richard Frere held office as Bailiff of the Manor of Marlowe, co. Bucks., and keeper of the King's Swans there and was confirmed therein by the same Act.
1505. Harry Wykes held office as Swan-master for the Thames.
1506. Richard Hallwell, "one of the gentlemen ushers of the chamber," appointed for life keeper of the park and warren of Stokenham, co. Devon, together with the fishery of the stank called "le Leyer," belonging to the manor of Stokenham, with the free-fishery and Swans of the said park, warren and stank, August 2nd.

1507. David Cecil of Stamford and Burghley appointed Bailiff of Whittlesea Mere and keeper of the Swans there for seven years.
- 15(?) . James Braybrooke appointed, during pleasure, for the Thames with all waters running thereinto (died before May 23rd, 1509).
1509. George Assheby appointed *vice* James Braybrooke, deceased, May 23rd.
Hugh Edwardes, "sewer of the chamber," appointed during pleasure, Constable of Maxey Castle, Northants., with custody of all the Swans lately belonging to the King's grandame (Margaret, Countess of Richmond and Derby) in Cambs., Hunts., Northants. and Lincs., July 9th.
1511. David Cecil of Stamford and Burghley appointed Swan-master for cos. Cambs., Hunts., Northants. and Lincs. for thirty years (died 1535).
1535. Richard Cecil of Burghley appointed Bailiff of Whittlesea Mere and Swan-master as his father David Cecil (died 1553).
1540. Sir John Williams of Ricott, Oxon., appointed Swan-master for the Thames and all other waters in England, except those of the Duchy of Lancaster (died 1559).
1553. Sir William Cecil of Burghley appointed as his father Richard Cecil (died 1598).
1556. John Northerne, alias Aumbrie, of Maxey, Northants., Thomas Ogle of Pinchbeck, Lincs., and — Taylor were acting as his deputies.
1570. Matthew Naylor acting as a deputy for Sir William Cecil.
1576. Edward Clere of Blickling, Norfolk, held office as deputy Swan-master for Norfolk and Suffolk.
1587. John Thorowgood held office as deputy Swan-master for Hertfordshire.
1593. Thomas Sackville, Lord Buckhurst, Comptroller of the Household, held office as Swan-master for the whole of England (died 1608).
- 15(?) . Edward Clerke of Lincolns Inn, acting as deputy for the Thames under Lord Buckhurst.
1593. R. Maylard of Hampton Court, acting as deputy for the Thames under Lord Buckhurst.
Sir William More of Loseley, Surrey, appointed deputy for Surrey under Lord Buckhurst (died 1600).
- 1608(?) . Sir James Mervin, appointed Swan-master for the whole of England.
1612. Thomas Harwood acting as "vice-deputie" for Ramsey Mere and adjoining waters, co. Hunts.
1614. Sir William Andrews held office as Swan-master for the whole of England; surrendered his appointment before Dec. 6th, 1627.
Sir Lawrence Tanfield of Burford and Great Tew, Oxon., and John D'Oyley of Chiselhampton, Oxon., acting as deputies for the Thames under Sir William Andrews.
1625. Sir Henry Hobart of Blickling, Norfolk, held office as deputy Swan-master for Norfolk and Suffolk (died 1625).
1627. John Witherings appointed for life Swan-master for the whole of England Dec. 6th; he was still in office in 1632.

1631. Master Loggins of Staverton, Berks., acting as his deputy for the Thames.
1651. George Hill acting as deputy Swan-master for Lincs. (and ? other counties).
1661. Edward Montague, Earl of Sandwich, appointed Bailiff of Whittlesea Mere and Swan-master for the whole of England, May 10th.
1662. John Heron, held office as deputy Swan-master for Cambs., Hunts., Lincs. and Northants.
- 16(?). Robert Montague, Earl of Manchester, appointed Swan-master for the Thames (died before Oct. 23rd, 1683).
1683. Hon. Bernard Grenville, groom of the Bed-chamber, appointed *vice* the Earl of Manchester, deceased, Oct. 23rd.
1692. Sir Bevill Granville, appointed Swan-master for the Thames and the whole of England, March 5th (died 1706).
1708. W. Bethell acting as deputy Swan-master for Holderness, E. Yorks.
1799. Richard Roberts was keeper of the King's Swans on the Thames.

NOTES

"BRITISH BIRDS" MARKING SCHEME.

"RINGERS" are requested to send in to the Editor, not later than October 1st, their schedules, together with a list showing the number of each species ringed.

BLUE-HEADED WAGTAIL BREEDING IN NORTH ENGLAND.

It was so long ago as 1869-70 that *Motacilla flava flava* was recorded as breeding at Dunston, near Newcastle; but since about that period there has been no authentic instance of its having nested in the northern counties of England. It may therefore be of interest to put upon record the fact that it is this season (1928) again nesting on Tyneside.

As the locality has been much raided by egg-collectors of recent years, it seems undesirable to publish further details, but I have seen at least two nesting pairs, one of which was feeding well-grown young in the nest on July 23rd.

GEORGE BOLAM.

MULTIPLE NEST-BUILDING BY PIED-WAGTAIL.

A PIED WAGTAIL (*Motacilla a. yarrellii*) built six nests this



spring in a group of nine ventilation-holes in the side of a farm-building at Sandiway Farm, near Great Budworth, Cheshire. One of the holes was occupied by a piece of iron and two were

left empty ; each of the others contained a complete and lined nest ; the Wagtail laid in one nest which held two youngsters on May 25th, 1928.

In *British Birds*, Vol. XIX., p. 97, Mr. Jourdain, in a footnote to another record of multiple nest-building, pointed out that in each recorded case these nests had been built in some artificial objects (such as a pile of pipes, a series of rafters, or the rungs of a ladder) and never under purely natural conditions, and this rule certainly holds good in the present case. There were at that time records of multiple nest-building by Blackbird, Song-Thrush, Robin, Redstart and Chaffinch.

The accompanying photograph gives some idea of the nests.
A. W. BOYD.

YELLOW-BROWED WARBLER SEEN IN NORFOLK.

ON the evening of May 4th, 1928, as I was leaving Hickling Broad, I saw a small Warbler in the fence by the roadside. It was very tired and tame and allowed me to watch it within a few feet, when it would fly a short distance and settle again, until it disappeared into a thick clipped fence. Both when the bird was sitting and flying the wing-bars were very conspicuous, as was the eyestripe when it was resting. The wing-bars and the small size of the bird first drew my attention as I was cycling past. The short tail and size cause it to resemble a Goldcrest in flight more than a Warbler ; or a small Willow-Wren with a short tail, if I had to draw comparison with the Warblers. The wind was easterly at the time.

In 1906 I obtained a Yellow-browed Warbler (*Phylloscopus h. præmium*) at Cley, and have no doubt that the bird described above was of the same species.
J. VINCENT.

THREE SUCCESSIVE BROODS OF SONG-THRUSH IN SAME NEST.

WITH reference to my previous note (*antea*, p. 40) on the short interval between the broods of a Song-Thrush (*Turdus ph. clarkei*), this same bird (presumably) has now reared yet another brood, making three successive broods in the same nest in a single season. The one remaining chick of the second brood was fledged on June 1st, two infertile eggs remaining in the nest. On June 9th she was repairing the nest ; on the 10th one of the infertile eggs had been removed ; on the 14th there was one fresh egg, the one remaining in fertile egg being still in the nest ; on the 15th there was

another egg. By the 18th the other infertile egg had been removed and there were now three fresh eggs. On July 1st there were two chicks (one of these fell from the nest later and was killed), the survivor being fledged on July 12th. The other egg, although containing a nearly-formed chick, failed to hatch. A summary of the broods is as follows:—

1st brood, 4 eggs, 3 chicks, fledged April 28th.

2nd brood, 5 eggs, 3 chicks (only one survived), fledged June 1st.

3rd brood, 3 eggs, 2 chicks (only one survived), fledged July 12th.

Total reared—five chicks from twelve eggs.

The bird was a remarkably close sitter.

CHARLES E. ALFORD.

[It is apparently less common to find the Song-Thrush using the same nest twice in the season than the Blackbird, though there are a fair number of cases on record of this occurrence. (See *Report Caradoc and Severn Valley F.C.*, 1905, p. 24, and 1920, p. 16; *Zool*, 1906, p. 312; 1913, p. 467, etc.). The only other case of the British Song-Thrush adopting this somewhat perfunctory method three times in one season with which I am acquainted is contained in a note in the *Field* for July 31st, 1875.—F. C. R. JOURDAIN.]

BLACKBIRDS' ATTACHMENT TO TERRITORY.

ALTHOUGH not unusual for the Blackbird (*Turdus m. merula*) to use the same nest for a second or third brood, the following observations (made in my garden in Mawgan-in-Pydar, on the north coast of Cornwall) must be of some interest, because they prove how attached this bird can become to a certain territory and the same nest.

In 1925 a pair nested successfully in a tall escalonia hedge close to the house. The fence was so "woody" and ragged that the only hope of re-establishing it was to cut it back hard to within two feet of the ground and this I had done during the winter. The birds were very tame and fed, almost daily, on the terrace all the winter.

In March, 1926, the hen built her nest in the branch of a large stone pine twenty feet above the ground level; it stood only a few paces distant from the cut fence. In this nest three strong broods were reared. Although the nest was severely battered in the winter by fierce Atlantic gales, it stood firm.

In March, 1927, the same nest was relined and again three broods safely reared in it. The gales of the succeeding

winter were too much for the now rotted materials and it was blown away. The same birds, as previously, remained constantly near the house.

In March, 1928, the hen built in the same tree, but in a stouter branch fully fifty feet above the ground. Two broods were safely reared in this nest and a third clutch of eggs hatched in it. But, to my intense regret, when the nestlings were a week old, the cock was killed and I was unable to discover the cause. The hen, single handed, continued both to brood and feed the nestlings. But, after three days, a cold and drizzly spell intervened and, the task being beyond her compass, the young died of unavoidable exposure.

The hen, though now unmated, is still faithful to her long possessed territory. It will be a matter of interest, next spring, to see whether she will remate and nest again in her favourite pine.

The rearing of nine broods in only two nests is an unique experience to me, as also is the construction of a nest at so great a height from the ground as fifty feet.

I append the dates of incubation and fledging of the various broods during the three years the birds were kept under close and constant observation.

Year	1ST BROOD		2ND BROOD		3RD BROOD		
	Incubation begun	Young left Nest	Incubation begun	Young left Nest	Incubation begun	Young left Nest	
1926	22/3	19/4	1/5	30/5	23/6	21/7	All six broods in the same nest. Three broods in a new nest.
1927	2/4	1/5	8/5	6/6	26/6	25/7	
1928	21/3	20/4	30/4	30/5	16/6	see note	

NOTE.—Eggs hatched June 30th, cock killed July 6th, young died in nest July 9th. The weather between March 22nd and 27th, 1927, was cold, wet and stormy.

B. H. RYVES.

BLACKBIRD TAKING A FROG.

WHEN motoring through a country lane near Battle, Sussex, a few days ago, two Blackbirds (*Turdus m. merula*) suddenly started to fly across the road, one apparently chasing the other. On either side of the lane was a steep bank which prevented the birds from seeing the car until they were upon it. The birds were very scared, and, in turning to re-enter the wood from which they had just come, the leading bird dropped a frog which I should say was more than half grown.

I have never heard of Blackbirds eating frogs, and, if they

do, one would suppose they only attacked very little frogs, but I distinctly saw the frog, which dropped almost on to the car, so I have no doubt as to its size. STEPHEN J. WHITE.

INCREASE OF NIGHTINGALES IN DEVON.

PERHAPS I may briefly add my own experience of Nightingales in Devon to the interesting note recently given (*antea*, p. 41). On May 1st, 1924, I heard two Nightingales (*Luscinia m. megarhyncha*), at least two miles apart, near the village of Sticklepath on the northern slope of Dartmoor, and twelve miles west of the limit usually reached by this species as defined in *British Birds*, Vol. V., p. 6. Both these birds too were singing at about 700 ft. above sea-level—an exceptional altitude. I am quite convinced that the Nightingale is much more frequent in S.E. Devon now than it was even ten years ago, and that it is slowly but steadily increasing its range westwards. This is probably the case in many districts, but I have noticed it particularly in the Budleigh-Salterton area. Last year, 1927, two Nightingales sang for several weeks in this neighbourhood, and this year three have been heard within a radius of two miles.

I found one established with its mate among bushes on a landslide below a high cliff, and not 100 yards from the seashore. This seems a curious and unusual habitat.

Some supposed Nightingales on investigation have turned out to be night-singing Woodlarks (*Lullula a. arborea*); but if only this large county had a sufficiency of competent observers many more Nightingales would, I am sure, be found in hitherto unsuspected places. W. WALMESLEY WHITE.

SWIFT TAKING FOOD FROM UNDER EAVES.

ON July 12th, 1928, whilst waiting in the shade of a house at Batford, near Harpenden, I was very much interested in the movements of a Swift (*Apus a. apus*). It kept flying in under the eaves at various points and started picking insects (or spiders) from the wood-work and the bricks. I watched it for quite ten minutes, and there was no doubt that food, not grit, was its object. The bird was no more than 20 feet above my head, so that I could see it, and even some of its victims, distinctly. It is new to me that Swifts obtain their food otherwise than in the air, though I have seen Swallows alight on a lawn and feed, apparently, on some insect within reach.

A. H. MEIKLEJOHN.

NIGHTJAR NESTING ON SHINGLE.

ON July 15th, 1928, I flushed a Nightjar (*Caprimulgus e. europæus*) off eggs in what I should think is an unusual site, viz., on the wide landward slope of the shingle bank about 200 yards south of Haven House between Aldeburgh and Thorpeness, Suffolk. The spot was a typical one for the Ringed Plover, consisting of shingle with sparse growths



of coarse grass, horned poppy, a few docks, etc. No trees, gorse bushes, bracken or other features of the usual Nightjar haunt were in sight, or at least anywhere near. T. G. POWELL.

[The Nightjar has nested in similar situations on Dungeness, Kent, for several years past.—N.F.T.]

COMMON BUZZARD IN HERTFORDSHIRE AND BUCKINGHAMSHIRE.

ON May 30th, 1928, I saw a pair of Common Buzzards (*Buteo buteo*) flying over Ringshall Common, part of the National Trust Ashridge Estate, on the borders of Herts and Bucks.

On June 23rd a pair were flying on the same line over Duncombe's Terrace Woods. On July 4th I saw one near Duncombe's Terrace Woods. It was flying low, I think it

had risen from a tree, and then rose in spirals until I lost sight of it. I had previously, on May 7th, had a distant glimpse of a Buzzard near the same place, too doubtful to record, but now it seems likely to have been one.

RUTH BLEZARD.

BITTERNS IN BEDFORDSHIRE.

DURING the severe spell of weather in December, 1927, two Bitterns (*Botaurus stellaris*) were killed in this county, one by a dog (so possibly maimed previously) at Barton-in-the-Clay about the 15th, and another, unfortunately shot, from the brook running alongside the highway at Elstow on the 28th.

Since the winter of 1899-1900, which was a Bittern year generally and when no less than five were killed locally and two others seen, the more recent unrecorded occurrences in this county are: one flushed from the Ouse at Biddenham in January, 1903; two shot from the same waterway at Kempston and Goldington in January, 1907; another killed about January 25th, 1909, and one seen at the end of November following, both in the latter locality. In 1918 two were shot from the Goldington stretch of the river, again at the latter end of January.

J. S. ELLIOTT.

BRENT GOOSE IN CO. ANTRIM IN JULY.

WHILE visiting Muck Island, off Islandmagee, co. Antrim, on the evening of July 2nd, 1928, I observed a pair of Brent Geese (*Branta bernicla*) swimming in leisurely fashion in the vicinity of a boulder-strewn gravel bar. The birds subsequently landed on the bar with the obvious intention of spending the night there. I had the unusual good fortune of approaching within ten yards of the pair before they swam off with surprising unconcern. C. BLAKE WHELAN.

[An occurrence in June in co. Antrim is recorded in *Br. B.*, Vol. XXI., p. 65.—EDS.]

THE BLACK BRENT GEESE RECORDED BY THE LATE F. COBURN.

IN *A Practical Handbook of British Birds*, Vol. II., p. 258, there is a note about a number of specimens of *Branta b. nigricans* recorded from Staffordshire (November, 1895), Warwickshire (November, 1897) and Norfolk (February, 1902, January, 1907, and January, 1909) by the late F. Coburn. While we never accepted these as authentic, they were so accepted by the late J. H. Gurney (*Zool.* 1908, pp. 121-123 and 1910, p. 123). Dr.

B. B. Riviere, who has for some years been working systematically to bring the *Birds of Norfolk* up to date, was anxious to have critically examined the three supposed specimens of this goose taken in the Wash, Norfolk, which were formerly in the collection of the late J. H. Gurney (who received them from Coburn) and are now in the Norwich Castle Museum. I am much indebted to Dr. Riviere and the authorities of the Museum for having given me the opportunity of examining these birds. They are labelled Kings Lynn, January 26th, 1909, on which date Mr. Gurney states (*Zoologist* 1910, p. 123) seven of this form were killed in the Wash, while altogether fourteen were obtained from gunners by Mr. Coburn during this month and December, 1908.

I have compared them carefully with the very good series of twenty skins of *B. b. nigricans* in the British Museum, and with the larger series of *B. b. bernicla* in the same and in my own collection, and find them to be undoubtedly *B. b. bernicla* and not *nigricans* at all. *B. b. nigricans* is uniformly and constantly darker on the upper-parts than any of these three birds and than any British-taken Brents I have seen, also the under-parts of *nigricans* are darker, and sometimes much darker. With regard to the white neck-patches the majority of *nigricans* have the white joined in the front of the neck, and none of these has. In one (a male) the neck-patches are as large as in some *nigricans*, but the upper- and under-parts of this bird are markedly paler than any *B. b. nigricans*. In another (a female) the neck-patches are also large, though no larger than in some other *B. b. bernicla*, and the upper-parts are distinctly paler than in *B. b. nigricans*. The third bird (a male) is one of the darkest Common Brents I have seen but its neck-patches are quite normal.

Coburn appears to have been misled by the character of the size of the white neck-patches. This varies in both forms, though in many *B. b. nigricans* the white meets in the front of the neck, which it never definitely does in *B. b. bernicla*. Another distinguishing character for *B. b. nigricans* mentioned by Coburn is that the under tail-coverts project beyond the tail-feathers, but I find this variable in both forms. A very few *B. b. bernicla* also approach very nearly some *B. b. nigricans* in the colour of the under-parts, and the colour of the *upper-parts* (not mentioned by Coburn) is no doubt the most constant character.

Had the specimens recorded by Coburn as having occurred in different parts of the country in different years really been of this form one would have had to conclude that the bird

was a fairly regular migrant to this country, which is scarcely credible since it inhabits the Pacific side of America and eastern Asia as far west as the Lena.

H. F. WITHERBY.

WOOD-PIGEONS AND CHERRIES.

RECENTLY, Mr. H. H. Foster, Court Lodge Farm, Boxley, Kent, shot a Wood-Pigeon (*Columba p. palumbus*) in his cherry orchards at 5.30 a.m. On opening the bird's crop he found in it 82 "Napoleon" cherries. These cherries were in the soft state before the stone was hard. The Pigeon had started on the "Early Rivers" cherry and when the stone became hard had moved to a later sort, finishing with the "Napoleons," the latest variety in these orchards. On July 14th, Mr. Foster gathered off the tree 82 cherries (not selected) and these weighed 1 lb. 2 oz. Cherries are selling retail at 1s. per lb. The Pigeons were coming into the orchards in flocks of ten and upwards. The bird shot had not finished feeding, so that 82 cherries is a very low estimate of the number it would consume in one meal. Unless frightened away these Pigeons would have fed in the orchards as long as the cherries had not "stoned," and as they are planted for a sequence the damage that could be done by even ten Pigeons during the season is almost sufficient to ruin the crop.

JAMES R. HALE.

EARLY NESTING OF TURTLE-DOVE IN CHESHIRE.

ON May 16th, 1928, at Frandley, near Great Budworth, Cheshire, I put a Turtle-Dove (*Streptopelia t. turtur*) off a nest with two eggs in a willow bush; I learnt later from a labourer that the first egg was laid on May 12th. The first Turtle-Dove of the season was seen a few yards from this spot on April 28th.

From a note in *British Birds*, Vol. VIII., p. 77, it appears that there is only one record of an egg earlier than May 12th; but that was considerably earlier—May 1st in Essex.

A. W. BOYD.

[On May 22nd, 1893, I found two young Turtle-Doves about four days old in a nest on the Gog-Magog hills near Cambridge. In this case the first egg must have been laid about May 2nd or 3rd.—N.F.T.]

RINGED PLOVERS' DEFENCE OF TERRITORY.

AT the mouth of the River Cuckmere the shingle is piled up into banks. On a visit there with some boys on June 17th,

1928, I found a pair of Ringed Plovers (*Charadrius hiaticula*) occupying each of these banks. As we approached one bank a pair of birds would fly off to the next bank, and the occupying pair, or at any rate one of them, would attack the intruders. No actual fighting took place because the trespassers, after running a short distance, would fly on. A belated Dunlin (*Calidris alpina*), however, settled in one of the Ringed Plovers' territories, and, being apparently ignorant of the conditions, was knocked right over, and appeared to remain stunned for a time.

NORMAN H. JOY.

THE BREEDING OF THE SPOTTED CRAKE IN SOUTH WALES.

THE breeding of the Spotted Crake (*Porzana porzana*) in our Islands has been recorded on but few occasions, and for a good many years not at all. The following notes, therefore, may be acceptable.

Acting on information received from some Snipe shooters in the previous August, which suggested the presence of Spotted Crakes in a certain marsh in South Wales, I visited the place on May 20th, 1927, accompanied by a young friend. No Spotted Crake was seen, though a low grunting sound heard by my companion - may have emanated from one of these birds. I did, however, discover an obvious small Crake's nest, apparently just completed, in a clump of rushes. This find was re-examined a week later, but still there were no eggs in it ; and a further search proved fruitless.

On May 17th, 1928, with Walpole-Bond, I visited the same locality. During our search of the marsh at least two veritable Spotted Crakes on wing, disjointed limp-looking birds with dangling legs - were flushed at close quarters, when their pale-spotted brown plumage and the red at the base of their bills were plainly visible ; and again, in much the same spot as last year, I found an obvious Crake's nest. This time, though, it was in a tussock of soft grass and was not in an advanced condition. Nevertheless, I was pleased with the day's doings, since I felt that in all probability the actual breeding-site had now been fined down to an oblong of ground, roughly 100 yards in length by 50 yards in width.

Thereafter, on May 21st, this time with another assistant besides Walpole-Bond, the hunt was renewed, systematic searching in line very close together being the order of the day. At the very commencement of the third turn I parted the top of a grass-tussock, and exposed to view a Spotted

Crake's nest with nine eggs. They were fresh and stone cold, and reminded me of diminutive Moorhens' eggs.

The nest, a compact, neatly-built structure, about 5 inches across by $3\frac{1}{2}$ inches in depth externally, with an egg-cup 4 inches across by 3 inches deep, was sunk into the bottom of a tussock of soft grass (about 1 ft. 6 inches in height), one of thousands of such tufts growing on wet (there were but 3 inches of water) but firm ground. It was a simple affair, albeit carefully constructed of fine, soft, dead grasses, and one or two dead leaves of the common sallow. Owing to the blades of the tussock arching inwards, not a vestige of the nest or its contents was visible till the herbage had been disarranged. The bird, as was evident, approached its home by means of a small tunnel leading up from the water level.

H. A. GILBERT.

LETTERS.

NUMBER OF EGGS LAID BY MISTLE-THRUSH.

To the Editors of BRITISH BIRDS.

SIRS,—Of forty-three nests of the Mistle-Thrush (*Turdus v. viscivorus*) examined during the past eight years in various localities in Cumberland, two held clutches of five eggs each, three had three eggs each, the rest four. One five-egg clutch was found in 1925, the other in 1926, the two localities being about two miles apart.

R. H. BROWN.

AN AUTUMN HABIT OF THE ROOK.

To the Editors of BRITISH BIRDS.

SIRS,—My notes on the autumn aerial performances of the Rook are similar to those of the Rev. E. U. Savage (*antea*, p. 57) except that I have also notes of this spectacular event being seen in October and November, the latest date recorded being November 25th. Mr. Savage states that the climax of this habit is reached about September 18th, but on August 27th of 1919 and 1926 a very large flock was observed to ascend to a great altitude, many birds becoming invisible to the naked eye, and begin diving earthwards, whilst a like happening was noticed on November 24th, 1920. This spectacular event often occurs in the early afternoon and will occasionally occur on windy or wet days.

The courtship proper of the Rook, *i.e.*, male, with drooping wings and expanded tail, bowing to the female, has been observed on various days of October and November during most years, whilst on certain days each year of months September to November, Rooks have been noticed about their nests.

It should be noticed that certain of the Waders, particularly the Curlew, have also the habit, when in flock, of diving earthwards from a good altitude.

R. H. BROWN.

REVIEWS

The London Naturalist. The Journal of the London Natural History Society. 1927. London, 1928. 3s.

THIS issue contains, as is usual in the yearly reports of this active Society, a good deal of work on birds in and around London. Mr. A. Holte Macpherson contributes an informative article on London Reservoirs and the influence they have on bird life, an influence which is especially remarkable in a district so increasingly congested with human beings and their buildings. Indeed, the reservoirs and other sheets of water afford the happiest and most profitable hunting grounds for the bird watcher who is tied to London, for, as Mr. Macpherson says, he can be sure of seeing some interesting birds on a short Saturday afternoon and always has the chance of encountering some rarity. In the "Report" for 1927 we note that the total number of species of birds recorded for the Society's district (within 20 miles of St. Paul's) has been brought up to 186. The additions during 1927 were Knot, Curlew-Sandpiper and Oystercatcher (see *Brit. B.*, XXI., pp. 129 and 205) and Wood-Sandpiper (*Tringa glareola*) which was seen at the Staines Reservoir on August 17th and 18th.

Transactions of the Norfolk and Norwich Naturalists' Society, Vol. XII., Part III., Dec. 1927.

IN this part there are several reports and papers of interest to ornithologists. Mr. A. H. Patterson has some interesting notes, which include details of his view of four Gull-billed Terns (*Gelochelidon nilotica*) on Breydon on May 16th, 1925. In Dr. S. H. Long's report on protection in Norfolk for 1927 we find, among other interesting items, that a pair of Magpies hatched off in the Broads district and another pair was seen on a heath in north Norfolk. Dr. Long also mentions the Hooded Crows, which have been suspected of nesting at Winterton, and states that on June 29th, 1927, he saw a pair with three young, which "must have been hatched somewhere in the immediate neighbourhood." Mr. B. Cozens-Hardy contributes an historical article on Cley-next-the-Sea and its Marshes, which has a special interest in view of the fact that Cley Marsh has been taken over as a breeding reserve by the newly-formed Norfolk Naturalists' Trust. Though at present the marsh is being kept absolutely undisturbed between February and September and some breeding birds may thus escape observation, a good view over the marsh can be had from the "East Bank," and a number of ornithologists have taken advantage of this and some scarce birds have been seen. This experiment will be watched with interest and it is to be hoped that it will meet with some real success.

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SOME NEW BRITISH BIRDS AND OTHER ALTERATIONS TO THE BRITISH LIST.

BY

H. F. WITHERBY.

THREE birds new to the British List have been admitted by the British Ornithologists' Union List Committee since the article in Vol. XX., pp. 11-16. These new birds are described below and Mr. Jourdain has supplied paragraphs on their breeding habits and distribution abroad.

A few changes of name have also been accepted by the B.O.U. List Committee, which have not been referred to in our pages and it has, therefore, been thought advisable to give at the end of this article a complete list of additions and alterations since the publication of the last part of *A Practical Handbook of British Birds* in February, 1924.

THE OUTER HEBRIDEAN WREN. *Troglodytes troglodytes hebridensis* Meinertzhagen.

TROGLODYTES TROGLODYTES HEBRIDENSIS Meinertzhagen, Scot. Nat., 1924, p. 135, Butt of Lewis, Outer Hebrides.

In the *Practical Handbook*, Vol. I., p. 497, we pointed out that Wrens from the Outer Hebrides were intermediate between the typical form and *T. t. zetlandicus*. Col. R. Meinertzhagen, in describing them, points out that they are as dark as *zetlandicus*, but with rather less barring below, but that in size they are like *T. t. troglodytes*. Since the publication of the *Handbook* I have been able to examine a good many more specimens. In colour these are all uniformly dark like the Shetland birds, though the barring appears to me a variable character. Three specimens in juvenile plumage, shown to me by Col. W. Payn, are interesting as they are also very dark compared with juveniles of the typical form. Measurements of a good series of males of our four British forms are as follows in millimetres:—

			♂ Wing	Bill
<i>Troglodytes t. troglodytes</i>	...	...	46-50	12-14.
<i>Troglodytes t. hebridensis</i>	...	...	46-51	12.5-14.5
<i>Troglodytes t. zetlandicus</i>	...	...	50-54	14-16
<i>Troglodytes t. hirtensis</i>	...	...	51-55	13.5-16

Distribution.—I have examined specimens from Lewis, Harris, S. and N. Uist.

THE AMERICAN NIGHTJAR.—*Chordeiles virginianus virginianus* (Gm.).

CAPRIMULGUS VIRGINIANUS Gmelin, Syst. Nat., I., pt. 2, p. 1028 (1789—Virginia).

A specimen of this bird was exhibited at the November

1927 meeting of the British Ornithologists' Club by Dr. P. R. Lowe on behalf of Major Dorrien Smith, who shot the bird at Tresco Abbey, Scilly Isles (*Bull. B.O.C.*, XLVIII., p. 41). It was a female and was obtained on September 17th, 1927. This is the first known occurrence of the species in Europe. In America it is a common bird, known as the Nighthawk, with a wide breeding range in North America and migrating through Central to South America in winter.

In the A.O.U. *Check-List* (1910) five sub-species are accepted, while Ridgway in his *Birds of North and Middle America*, Part VI., 1914, recognizes nine. The specimen in question was carefully examined by the B.O.U. List Committee, who came to the conclusion that it was an example of the typical form. This form may be described as follows:—

Adult male.—Upper-parts black with a faint greenish gloss, the whole spotted and freckled with grey and buff, these markings being sparse on the centre of the crown and mantle; nape with wide streaks of buff (occasionally grey), scapulars more profusely speckled and mottled and their outer webs prominently barred with whitish and pale buff; upper tail-coverts irregularly barred with grey mottlings; lores and feathers over and behind eyes with tips and edges of a whitish-grey; chin, cheeks and ear-coverts black spotted and streaked buff and grey; rest of chin, upper-throat, and extending down the sides of the throat pure white, forming a large A shaped patch; lower-throat black, spotted buff; rest of under-parts white closely barred black-brown, the under tail-coverts with fewer bars, which are often broken; tail black glossed greenish and with mottled bars of grey, which in central pair extend to tip, but, in rest, distal third of feather black with a broad white subterminal band often not extending right across outer web, but varying in this respect and in width; primaries brown-black, glossed greenish, with a broad white band (on outer primary commencing just below tips of primary-coverts) extending across first five (occasionally a slight white mark in centre of sixth primary); secondaries brown-black with sparse bars of mottled grey on inner webs, innermost feathers mottled and speckled grey; wing-coverts as upper-parts, but with tips of median coverts considerably mottled grey, primary-coverts uniform brown-black; a patch of white on front edge of wing.

Adult female.—Like male, but patch on chin smaller and usually buff and not white; under-parts often tinged buff; all tail-feathers with bars of mottled grey and without white bands as in male; white band on primaries much narrower than in male and often restricted to inner webs of feathers.

Juvenile.—Like adult female, but upper-parts more mottled with grey, area of chin patch narrowly barred black-brown, primaries narrowly tipped pale buff.

Measurements and structure.—♂ wing 204–213 (one 195) mm., tail 103–115 (one 95), tarsus 14–16, bill from feathers 5.5–8 (11 measured). ♀ wing 190–198 (one 210) (Scilly Isles specimen 195). Primaries: first longest, second 2–5 mm. shorter, third 14–20 shorter, fourth 27–36 shorter, fifth 46–56 shorter, sixth 65–75 shorter; outer webs not definitely emarginated. Tail definitely forked, ten feathers, tips

rounded. Nostrils as in *Caprimulgus europæus*, but bill much smaller. Rictal bristles very short and fine and scarcely noticeable. Tarsus and toes (including pectinated claw of middle toe) much as in *Caprimulgus europæus*.

CHARACTERS AND ALLIED FORMS.—In general appearance upper-parts blacker than in *Caprimulgus e. europæus* and without shaft-streaks to the feathers, patch on chin much larger, white band on wing more proximal and larger and extending to fourth and fifth primaries, white band on tail of male is subterminal and not at the tip, tail not rounded but decidedly forked, first (outer) primary longer instead of shorter than second. Other forms of *Chordeiles virginianus* differ by being paler and more greyish or more buffish and tawny, while some are considerably smaller.

Mr. Jourdain provides the following :—

BREEDING-HABITS.—Breeds on bare ground, without nest, on flat rocks, in quarries, pasture lands, sand-hills, cinder heaps and now frequently on flat gravelled roofs of houses. Eggs.—Normally two laid alternate days ; shape elliptical ovate. Colour varies from creamy-white to grey, freely but irregularly marked with blotches and speckles of slate-grey, olive and lilac and very variable. Average of 81 eggs : 29.9 x 21.8, max. 33.5 x 22.8, min. 27.6 x 20.5 mm. (Bendire). Breeding-season.—Usually in early June in north and first half of May in south. Incubation.—About sixteen days, both sexes taking part (Bendire).

DISTRIBUTION.—*Abroad*.—Breeds in North America as far as the tree limit from south Yukon, Saskatchewan, Keewatin, northern Ontario, northern Quebec, south Labrador, Nova Scotia, west Newfoundland south to northern Gulf States and west from north-east Texas to Minnesota, British Columbia and Alberta. In winter through Greater Antilles and Central America to South America, south to south Brazil, Argentina and Paraguay. Casual Melville Island.

THE AMERICAN RED-NECKED GREBE.—*Podiceps griseigena holboellii* Reinhardt.

PODICEPS HOLBOELLII Reinhardt, Videnskab, Meddelelser, p. 76 (1853—Greenland).

An undoubted specimen of this large American form of the Red-necked Grebe was exhibited at the December 1927 meeting of the British Ornithologists' Club by Dr. P. R. Lowe (*Bull. B.O.C.*, XLVIII., p. 53). It had been forwarded to the British Museum by Messrs. Betteridge & Son of Birmingham, and subsequently Dr. Lowe ascertained its history from Mr. J. MacGregor, who shot it in a bay near Aultbea, Ross-shire in September, 1925. He had observed it for a few days previously (*loc. cit.*, p. 70).

Holboell's Grebe, as it is called in North America, only differs from the typical form by its larger size. The comparative measurements are as follow, those of the typical form being taken from *A Practical Handbook of British Birds*, Vol. II., p. 458, while those of *P. g. holboellii* are based on

my measurements of nine males and five females in the British Museum collection.

<i>Males</i>			<i>P. g. griseigena</i>	<i>P. g. holboellii</i>
Wing	...	...	160-180 (one 190*)	188-203 (one 210)
Tarsus	...	...	50-58	58-65
Bill from feathers			35-45	47-55 (one 42)
<i>Females</i>				
Wing	...	...	155-176	176-196
Bill ...	...	...	35-40	45-54

The Ross shire specimen, which was not sexed, measured : wing 20.3, tarsus 6.5, bill 5.5, so that it was an unusually large individual and could not be confused with any example of the typical form.

Mr. Jourdain provides the following :—

BREEDING-HABITS.—Breeds sometimes in small colonies or more frequently singly among reeds, or in the far north, among marsh-grass. *Nest.*—A heap of wet marsh-vegetation varying according to locality, reeds, marsh-grass or water-weeds, with which eggs are covered in absence of birds. *Eggs.*—Usually 4 to 5, occasionally only 3 or 6 to 8, pale bluish-white or buff when fresh, but rapidly becoming stained; 60 eggs average 53.7 x 34.5 : max. 64.5 x 37.5, min. 49 x 33 and 50.5 x 30 mm. (Bent). *Breeding-season.*—From last week May through June. *Incubation-period.*—22-23 days. Single brooded.

DISTRIBUTION.—*Abroad.*—Breeds in North America and eastern Asia, in America from north-west Alaska, north Mackenzie, north Ungava and Hudson Strait; south to north Washington, north Montana and south-west Minnesota, (probably Quebec and Ontario) south Labrador and New Brunswick (A. C. Bent); in Asia from Kamtschatka, Saghalien and Ussuria to Dauria (Transbaikalia). In America, winters in United States, chiefly on coasts, south to south California, south Colorado, Ohio Valley and north Carolina; in Asia through Japan to China. Accidental in Pribilof Isles, Aleutian Isles, Georgia, Greenland and Iceland.

The following is a complete list of additions to and changes in the British List since the publication of the last part of the *Handbook* and *A Check-List of British Birds* (1924).

ADDITIONS.

- | | |
|--|--------------------------------------|
| 72. A. <i>Anthus gustavi</i> Swinh.
The Petchora Pipit. | See <i>Brit. B.</i> , XX.,
p. 11. |
| 145. A. <i>Acrocephalus agricola agricola</i> (Jerdon)
The Paddy-field Warbler. | See <i>Brit. B.</i> , XX.,
p. 12. |
| 169. A. <i>Turdus musicus coburni</i> Sharpe
The Iceland Redwing. | See <i>Brit. B.</i> , XX.,
p. 14. |
| 203. A. <i>Troglodytes troglodytes hebridensis</i> Meinertz.
The Outer Hebridean Wren. | See above. |

* This is a specimen in summer plumage, without date, labelled Archangel, from the Bowdler Sharpe collection in the British Museum.

216. A. *Chordeiles virginianus virginianus* (Gm.) See above.
The American Nightjar.
297. A. *Branta bernicla hrota* (Müll.)
The Pale-breasted Brent Goose. Now re-admitted as distinct, see *Brit. B.*, XVIII., pp. 49-52 and 135-8; and *Ibis*, 1927, p. 311.
353. A. *Podiceps griseigena holboellii* Reinh. See above
The American Red-necked Grebe.
430. A. *Capella gallinago delicata* (Ord) See *Brit. B.*, XVII., pp. 283-8.
The American Snipe.

ALTERATIONS.

Name used in *Practical Handbook*.

Name to be now used.

57. *Plectrophenax nivalis* (L.)
The Snow-Bunting. *Plectrophenax nivalis nivalis* (L.). Because there is at least one subspecies in America which is recognized as distinct: see *Ibis*, 1928, p. 321.
72. *Anthus cervinus* (Pall.)
The Red-throated Pipit. *Anthus rufogularis* Brehm, *Lehrb. Naturgeschichte eur. Vög.*, II., p. 963, 1824, Nubia, Egypt, S. Europe and sometimes Germany. This is an older name than *cervinus* Pallas, 1827: see *Ibis* 1928, p. 322.
458. *Larus glaucoides* Meyer
The Iceland Gull. *Larus leucopterus* Vieillot, *Tabl. Encycl. Méthod.* 1, p. 346, 1820—Baffin's Bay. This name (which invalidated the same name used by Faber in 1822) was considered to refer to the Glaucous Gull, but has now been accepted for the Iceland: see Dwight, *Gulls of the World*, p. 256, and *Ibis*, 1928, p. 322.

FURTHER NOTES ON PUFFIN ISLAND, 1928.

BY

WILLIAM ASPDEN.

My notes on the Birds of Puffin Island (*antea*, p. 50) dealt with a period up to the end of the nesting-season of 1927. The season of 1928 has been marked by such unusual features as would seem to merit these further notes.

In the first place there has been a notable decrease in the numbers of birds frequenting the established Gulleries in the Anglesey area. The Herring-Gull (*Larus a. argentatus*) has not been present in its usual numbers and there has been a very marked decrease in the Lesser Black-backed Gull (*L. f. affinis*). This would seem to apply equally to the whole area and the cause not to be due to marked change in local conditions. Actually fewer birds *arrived* at the nesting haunts.

On Puffin Island, however, an added and known factor has rendered the breeding-season almost an absolute failure. Someone has placed a fox on the island. I say "someone" because it seems incredible that the animal could have reached the island on its own initiative. The half-mile wide sound between Puffin and Anglesey has rapid and strong currents which would render the crossing by a swimming animal almost impossible; moreover, there have been no foxes known in Anglesey for years. Between Puffin and the Carnarvonshire shore again there is a five-mile stretch of open sea and mud flats (at low tide) with never less than a mile or more of tricky water to be crossed. Foxes are numerous in the Carnarvonshire hills and the keepers and quarrymen often dig out litters for export to hunting counties. Local inhabitants sometimes procure cubs and attempt to domesticate them, but the results are always unsatisfactory and the animal is released or destroyed.

The fox on Puffin is presumably such an one and has doubtless been released there by someone without thought as to consequences.

The damage done is almost incredible and to anyone who knows the island staggering. I went over on Saturday, August 4th, to spend the week-end, crossing from Penmon about half an hour after sunset. When about half way across there was a commotion amongst a few Gulls on the steep slopes at the south-western end of the island and they rose on the wing, the whole flock crossing over to Anglesey.

I am told by the keeper and the people at the lighthouse cottages at Penmon that this happens every evening about dusk, and the birds have evidently learnt the fox's hunting times.

I walked the whole length of the island on landing and did not see or hear a living Gull, but only remains with chewed and cracked bones. Normally the air would be full of screaming Gulls and throughout the night their cries would continue, but during the nights of my visit there was no sound except for the occasional cat-like call of a Guillemot out on the sea. The nights were beautifully calm and a brilliant moon, just past full, lit up the slopes sufficiently strongly to show up even feeding rabbits. For some time I walked about but saw no birds. Once I heard the scream of a rabbit some distance away, but for the rest a deep silence reigned complete. This was not the Puffin Island I have known for some years, something had gone, the life of the place seemed to have died out.

The following morning I stepped out with the intention of making a thorough search for the fox's holt; but as I came round a corner of the building where I had slept, a pair of Ravens (*Corvus c. corax*) got up and were followed by four others which had been hidden by a dip in the ground. They flew over a little ridge and seemed to drop just beyond it. At the place where I had disturbed them I found the remains of a freshly killed Puffin (*Fratercula a. grabæ*). Ravens are sufficiently rare as to warrant interest at any time, and I am personally interested in their protection. Also I have been reluctant to attribute the killing of Puffins to Ravens, but this looked suspicious, and I determined to watch. I carefully stalked the little flock, and managed to get to a place where I could overlook them from a distance of forty yards. The six birds were standing about at some little distance apart, each one quite still and apparently watching for something. Suddenly one of them grabbed at an object on the ground and shook it, as a terrier shakes a rat. This was a signal for the other five to close in. There was no squabbling, no hurry and no fuss, and in a few minutes they separated again and as I got up to go towards them they flew off a distance of perhaps eighty yards.

I found again a patch of Puffin's feathers and a very few larger bones, feet and part of the skull. It had been an adult Puffin. I saw the same thing done again, this time the victim being a young Puffin, almost fully fledged I should say; a third time I managed to get within twenty-five yards of the group. It was a repetition. Each Raven stationed itself

by a Puffin burrow, often assuming a position absurdly like that of a Thrush watching a worm—head on one side as though listening. After some five minutes one of them caught an emerging Puffin and, as he was shaking it, a Herring-Gull swooped down and snatched at it. There was a sharp tug-of-war and before the other Ravens could close in the Gull was away with the headless body of the Puffin. The whole flock of Ravens immediately gave chase, and in the end compelled the raider to drop his prize into the sea. Two of the Ravens chased the Gull away to the mainland, the rest came back to business.

I followed the family about the Puffin colony almost the entire morning and their tameness was remarkable. They showed distinct signs of disgust when I put in an appearance, and on one occasion when I surprised them in a little gully the two old birds flew round within a few yards of my head "Prunking," and I really wondered if they were meditating an attack on me. In the afternoon they were joined by a flock of nine Carrion-Crows (*C. c. corone*) and the whole lot, keeping together, worked on the same principle. I did not see a Crow kill but they stood about like the Ravens, and kept with them the whole time. The slaughter of Puffins on the island has been a puzzle for a long time, and I personally suspected, and still suspect, the Great Black-backed Gulls (*L. marinus*) of being responsible for the disembowelled corpses which lie about. This business was more than merely disembowelling, the entire bird was eaten and nothing remained but a patch of feathers. The feathers were pulled off the Puffin in bundles, apparently with the edge of the beak, and the plucking was very expeditiously done.

Mr. Coward has commented on the dead Puffins on the island, and I think, like myself, he suspected the Great Black-backed Gull. There is now, however, not the least doubt that the Ravens take heavy toll. The pair which nested on the island reared three young, but the family has been joined by an odd bird, and they frequently fly across to Anglesey, and work the Penmon Warren.

The man at the lighthouse cottage has had thirteen chickens taken by them and was almost apologetic when he told me, as I have preached protection at him for years. He finished his tale of woe by the remark that the Ravens from the island "are evidently a bad strain." This little trip to Puffin was, therefore, by no means barren of interest despite the fox, though it has destroyed an illusion about Ravens.

Guillemots were still on the ledges, though the great

majority had gone. I saw three birds still sitting and one kicked her egg off the ledge as I came round the corner. The egg was apparently within a day or two of hatching.

I saw one young bird taken down from the cliff to the sea ; carried by one wing. The journey was only just a success, the rocks being missed by inches. Two other adults accompanied the bird which held the chick in its beak and as they left the ledge there was considerable noise and commotion from other birds watching. It seemed as though they were all giving advice. The chick was apparently at home at once on the water and paddled with alternate strokes as though quite used to it.

Razorbills had left the rocks and some few were out on the water but I saw none on shore.

The keeper is confident that he will be able to remove the fox when the undergrowth dies down, but at present there is so much cover that despite all efforts he has managed to escape when the men have been over, and though he has been seen several times, there has never been an opportunity to shoot him. It will be interesting to see what next season proves like, after the disturbance.

NOTES

NUMBERS OF EGGS LAID BY VARIOUS SPECIES IN CORNWALL.

THE attached Table shows the numbers of eggs in the clutch of various species found near Mawgan in Cornwall. The figures are taken from my diaries of the last four years and represent the clutches after full incubation had commenced. It has been my habit only to record nests in my own garden and vicinity, as I am able to follow up nearly all of such nests. I could give many more from memory, but I regret I did not record them all on paper.

Checking my figures with the clutches given by Coward, clutches, in some cases, seem to be generally smaller here.

TABLE SHOWING COMPLETED CLUTCHES FOUND IN NESTS EXAMINED

Year	Mistle-Thrush	Song-Thrush	Blackbird	Robin	Hedge-Sparrow	Wren	Great-Tit	Blue-Tit
1925	Eggs 4 " 4 " 4 " 4	Eggs 4 " 5 " 4 " 4 " 5 " 4	Eggs 3 " 3 " 3 " 4 " 3 " 3	Eggs 5 " 5 " 5 " 4 " 5 " 5 " 6	Eggs 4 " 4 " 4	Eggs 6 " 5 " 7	Eggs 6 " 7	Eggs 8 " 6 " 7
1926	Eggs 4 " 4 " 4 " 4 " 4	Eggs 4 " 4 " 5 " 4 " 4 " 4	Eggs 3 " 3 " 3 " 3 " 3 " 4	Eggs 5 " 5 " 5 " 5 " 5	Eggs 4 " 5 " 4 " 4	Eggs 7 " 6	Eggs 8 " 7	Eggs 7 " 8 " 7
1927	Eggs 4 " 4 " 4 " 4 " 4 " 4	Eggs 3 " 4 " 4 " 4 " 4 " 5 " 4	Eggs 3 " 4 " 3 " 3 " 4 " 3 " 5 " 5 " 5 " 5 } one pair	Eggs 4 " 5 " 5 " 5 " 5 " 5	Eggs 2 " 4 " 3 " 4	Eggs 8	Eggs 8 " 7	Eggs 9 " 6 " 9
1928	Eggs 4 " 4 " 4 " 4	Eggs 4 " 4 " 4 " 5 " 4 " 4 " 4 " 4 " 4	Eggs 3 " 3 " 3 " 4 " 3 " 4 " 4 " 4 " 3	Eggs 5 " 5 " 5 " 5 " 5	Eggs 4 " 4 " 4 " 4	Eggs 6 " 4	Eggs 7 " 7	Eggs 7 " 8 " 7
Total	20	27	29	24	15	8	8	12

B. H. RYVES.

SHORT-TOED LARK SEEN IN DEVONSHIRE.

ON August 2nd, 1928, while watching birds on Dawlish Warren Golf Links, I had the good fortune to see among a party of Sky-Larks and Meadow-Pipits a Short-toed Lark (*Calandrella brachydactyla*). I first noticed a conspicuously pale-coloured bird with the others on the wing. The little flock then obligingly settled near at hand, and I at once recognised the Short-toed Lark from its general similarity to *Calandrella minor rufescens*, resident in Tenerife, with which in former years I was well acquainted. I was able to watch this Lark for some ten minutes and note its plumage carefully before the approach of some players drove the whole party of birds away, and I failed to pick them up again.

The upper-parts of this bird were pale buffish-fawn with darker markings; the breast unspotted and pale buff. The pale buff eye-stripe was pronounced, and there were two faint buffish wing-bars. The primaries and tail-feathers were edged with pale buff and there was a ruddy tinge on the wing-coverts. The beak was short, stout and yellowish; the legs pale brown. The dark marks on the sides of the breast were not very noticeable, less so than I should have expected, but the bird struck me as being a young one. It uttered no note.

As far as I know, this is the first definite record of the Short-toed Lark from Devon, though D'Urban and Matthew have a notice of it within brackets. W. WALMESLEY WHITE.

INCUBATION- AND FLEDGING-PERIODS OF REED-WARBLER.

THE isolated pair of Reed-Warblers (*Acrocephalus s. scirpaceus*), which are the subject of the following notes, commenced building in the latter part of May. Their first nest was built within six inches of the site used in 1927 by presumably both or one of the same pair of birds.

The first egg was laid on June 2nd, 1928, and the fifth on June 6th. These were taken on the 7th. (In the 1927 nest the first egg was laid June 2nd and the fourth and last on the 5th; the four young hatching on June 16th. Incubation-period eleven days. Three young left the nest on June 28th, the fourth flying on the following day. Fledging-period thirteen to fourteen days).

The second nest was built twenty-eight feet north of the first, the first egg being laid on June 13th and the fourth on the 16th; replacement of nest and eggs taking nine days. At 10 a.m. on June 27th the nest contained two young and

two eggs. By 5 p.m. a third egg had hatched, the remaining egg proving to be infertile. Incubation-period eleven days. The three young were destroyed, possibly by rats, between 9.30 and 4.30 on June 29th.

The site of the third nest was located on July 2nd forty-four feet south-east of the first and seventy-three feet south-east of the second nest. The accompanying photograph shows the curious double nest as completed; that on the observer's left being only half built and some four inches from and joined by building material to the finished nest on the right.



This nest was built in meadow-sweet, the former two having been in reeds. The first egg was laid on July 5th and the fourth on July 8th; the time for replacement of nest and eggs being nine days as in the case of the second nest.

At 8 p.m. on July 19th the nest contained three young and one egg. At 10 a.m. on the 20th the contents were the same, but by 5 p.m. the fourth egg had hatched. Incubation-period eleven to twelve days. All four young were successfully reared and left the nest on the morning of July 31st. Fledging-period eleven to twelve days.

RAYMOND CARLYON-BRITTON.

A COURTSHIP DISPLAY OF THE SONG-THRUSH.

At 8.15 p.m. (summer time) on June 30th, 1927, I saw a love-display by a cock Song-Thrush (*Turdus ph. clarkei*) on our lawn. Of course the terms—cock and hen—are here used on assumption. The hen bird flew down, and hunted for worms

on the far side of the lawn. The cock alighted nearer the house, and ran up and down the grass before the hen. The cock had its head thrown right back with the beak wide open so that the lower mandible was almost vertical. The tail was moderately expanded, and *pressed down* on the grass. The breast feathers were fluffed out. The wings were carried at the side and not depressed as with the cock Pigeons'. In its gait the bird suggested the love-display of a Turkey cock, but it did not circle, only walked quickly up and down in front of the hen. The show ended by a mock charge by the hen, and the pair flew away together.

J. S. GAYNER.

TWO AND THREE CUCKOOS' EGGS IN ONE NEST.

ON the afternoon of June 3rd, 1928, my friend O. R. Owen and I paid a visit to a gorse clad common near Knighton, Radnorshire. Within five minutes of our arrival Owen flushed a female Cuckoo (*Cuculus c. canorus*) from an isolated hawthorn bush and her behaviour soon satisfied us that she was about to lay.

The bird was kept under continuous observation and as the hours passed it became apparent that the Cuckoo knew of no Meadow-Pipit's (*Anthus pratensis*) nest with an egg, or eggs, into which she had not already laid. Over and over again she would fly or glide to different, but definite places, on the common, hopping and floundering around in clumsy fashion searching for a nest where from her previous observations she evidently expected to find one.

Due to these manœuvres we discovered two incomplete but ruffled Meadow-Pipits' nests obviously deserted owing to the Cuckoo's too frequent visits, in consequence of which there is little doubt in my mind that on this particular day there happened to be no nest in a suitable condition for the Cuckoo. In such circumstances a Cuckoo, when in distress to lay, may visit on her laying area, every nest in which she has recently laid and every nest which is in the process of building.

At about 6 o'clock a male Cuckoo first put in an appearance and, in addition to calling frequently, flew about as though to distract the attention of the Meadow-Pipits which at times made frequent attacks upon his mate.

We noticed that upon two occasions during the afternoon the female Cuckoo had glided to an isolated bracken-covered gorse bush and, contrary to her behaviour on other parts of the common, immediately upon alighting flew away again as though she had made a mistake in settling there.

At 7.15 p.m., upon going to this bush, I called to Owen that it contained a Meadow-Pipit's nest with two eggs of the foster parent and also two Cuckoos' eggs, the product of different Cuckoos; and we expressed the opinion that the reason the Cuckoo appeared to have an aversion to that spot on each of her two visits was because she had already laid an egg in that nest.

We removed the two Cuckoos' eggs and one of the Meadow-Pipit's eggs and left in the nest only one egg of the Meadow-Pipit.

After a tiring series of manœuvres including three occasions upon which, in the company of her mate, the Cuckoo left the common altogether and flew down a valley only to return each time within 10 to 15 minutes, she glided exactly at 8.45 p.m. to the aforementioned nest and with my Zeiss glasses I watched her most distinctly disappear for a few seconds into the bush and emerge with an egg in her beak with which she flew back to the tree from which she had just glided. Shouting to Owen that I was certain she had laid, as he rushed to the spot I watched the Cuckoo in the tree swallow the Meadow-Pipit's egg.

The Cuckoo's flight from the nest carrying in her beak the stolen egg was so entirely normal and relatively rapid in contrast to the laboured flight of the many different Cuckoos which I have watched when laying their eggs, that one knew at once as she left the nest that the Cuckoo had on this occasion laid.

Those who persist in the view that the Cuckoo deposits its egg in a manner unlike any other bird do not explain why the Cuckoo's flight to deposit is so laboured. In my experience she is invariably so obviously heavy with egg.

In this connection it is worthy of record that at 8.30 p.m. I distinctly saw the Cuckoo take from a nest, which we had shortly before placed near a spot where she persistently searched, a Wood-Warbler's egg which we had put in it, and through my glasses, in the light of the lowering sun in a cloudless sky, the fresh yolk was clearly seen as she deliberately held this egg in her beak before swallowing it. From that moment, until she alighted fifteen minutes later at the nest in which she laid, the Cuckoo never again settled on the ground.

Although on this occasion the three Cuckoos' eggs (two from one female) never actually lay in the nest together, this is the second occasion upon which I have taken three Cuckoos' eggs from one nest. On June 17th, 1923, in the

company of F. Simmonds and his son on Sturt Fields on the borders of the Wyre Forest, Salop, at 6 o'clock in the morning we flushed a Meadow-Pipit in thick heather and the nest contained three Cuckoos' eggs (two from one Cuckoo) and two eggs of the Meadow-Pipit.

I surmise that the rare occasions upon which two eggs are laid in the same nest by the same Cuckoo are when there is no other more suitable nest known to the Cuckoo on one of her laying days.

There must be many occasions when a Cuckoo, about to lay an egg in a nest already containing two Cuckoos' eggs, takes one of the two Cuckoos' eggs in exchange for her own. When studying the Cuckoo so intensively some years ago we ascertained that the egg which the Cuckoo removes is the one nearest to her when she approaches the nest. On one occasion a Cuckoo laid an egg in a nest and took in exchange a Cuckoo's egg which we had purposely left to hatch.

It would be interesting to hear of other unquestionably authentic records of three Cuckoos' eggs being laid in one nest.

By an amazing coincidence my friend and reliable assistant in our strenuous Cuckoo days in Worcestershire, F. Simmonds, had the unique experience, also by accident, on June 3rd, 1928, of watching, on the old film-famous common, two Cuckoos each lay her egg into a different Meadow-Pipit's nest only 29 yards apart, one at about 6.30 p.m. and the other about one hour later. Simmonds tells me that as one Cuckoo started to glide to its chosen nest, the other from a neighbouring tree would fly at and disturb her and, but for this, he suggests that the eggs might have been laid earlier in the afternoon.

The Cuckoo that laid at 6.30 p.m. had, on a previous date, laid an egg in the nest into which the other Cuckoo laid at 7.30 p.m. There were thus two Cuckoos' eggs in this nest and of these "double events," as we call them, my collection contains about thirty examples found in the last twelve years either by myself or my friends.

EDGAR CHANCE.

HEN-HARRIER IN HAMPSHIRE.

ON January 10th, 1928, I had a fairly good view of a male Hen-Harrier (*Circus cyaneus*) flying over a field at the estuary of the Meon, about eight miles east of Southampton. I again saw the same bird on January 13th; this time it was quartering a meadow two or three miles away from where I

saw it before. I had an excellent view of it through binoculars, as it flew slowly along close to the ground. After I had been watching it for a short time, it was mobbed by a flock of Redshanks, which drove it off.

On April 26th, in company with two other observers, I had the Harrier under observation for about a quarter of an hour. It flew up and down some fields with slow, rather owl-like flight. It was several times attacked by nesting Plover, which it seemed glad to get rid of. Once it hovered for a short time in the manner of a Kestrel. On this occasion it was near to where I saw it on January 13th. C. R. STONOR.

GARGANEY NESTING IN GLOUCESTERSHIRE.

WHILE searching for Duck on April 4th, 1928, over an area of flooded meadows bordering the Severn, not many miles from Gloucester, with my friend, J. M. Lade, we put up a pair of Garganey (*Anas querquedula*) which had been resting at the edge of a meadow above the water-line. The birds settled on the water about 20 yards away, then rose again and flew to the cover of a half-submerged withy-bed. We saw them again on April 12th, when the floods had gone down considerably, in the company of several Teal (*A. c. crecca*), and again on the 17th, while on the 24th the drake was seen alone. By this time only one large sheet of water, encompassed by withy-beds, remained of the floods.

On May 1st, while looking for a Redshank's nest, my friend came upon a nest concealed in a patch of long grass, well out in the centre of a large-sized meadow, containing eight quite unstained eggs. The nest was not more than 50 yards from water. There was only a little down in the nest, the lining being of roots, etc., but it was unmistakably that of a Garganey. One small feather found amongst the down was whitish with a buff central mark, this colour extending to the tip.

On May 3rd the duck rose straight off the nest when approached to within about five yards. There were ten eggs in the nest, and considerably more down. Dr. O. H. Wild examined the down and eggs, and confirmed our identification.

The duck was again sitting on May 17th, and, while we were at the nest, the drake circled round, "grunting" occasionally. The nest was entirely lined with down and contained fourteen eggs, now very stained. On the 24th the nest contained only nine eggs, which were quite cold, and later, on blowing, proved to be infertile. There was no sign of the birds themselves. It is to be hoped that the five eggs hatched successfully, and the parent birds removed the

ducklings to the river. I have never heard before of the Garganey being more than a very occasional visitor to the county on migration.

LESLIE J. VERNALL.

STOCK-DOVE NESTING ON A HOUSE.

THE Stock-Dove (*Columba ænas*) not infrequently nests within the ruins of old buildings, but, with the following exception, I do not call to mind ever finding them nesting in any ordinary tenanted habitation. When visiting Coton Hall, Salop, on July 21st, with Mr. H. E. Forrest, we noticed a Stock-Dove fly out of the ivy-mantled back of the house, where a pair had their nest in the recess formed by a blank window, and this site we understood they had invariably tenanted for a decade or more years past.

J. S. ELLIOTT.

STOCK-DOVE LAYING BEFORE DEPARTURE OF EARLIER BROOD.

ON August 25th, 1928, at Trefnant, Denbighshire, I put a Stock-Dove (*Columba ænas*) out of an ivy covered oak tree, in which I had placed a barrel some years ago. On climbing to the barrel and glancing in there was a terrific commotion, and I hurriedly placed my cap over its entrance and in due course secured (for ringing and enlarging) two completely fledged young Stock-Doves. However, to my great surprise the barrel was seen still to contain a somewhat soiled egg, more or less concealed amid the dirt and feathers that covered the barrel's floor. This egg appeared to be fresh but might possibly have been an unfertile third egg of an abnormal three clutch that had produced the two young birds.

All doubts were put at rest two days later, when, on climbing to the barrel, a Stock-Dove was disturbed from a normal clutch of two eggs.

W. M. CONGREVE.

EARLY BREEDING OF STONE-CURLEW IN SUFFOLK AND SUSSEX.

ON April 10th, 1924, I found a nest with two eggs of the Stone-Curlew (*Burhinus æ. ædicnemus*) in Suffolk. I returned to the nest almost daily and on April 30th found the eggs had hatched. Allowing 26 days for incubation the second egg must have been laid on April 4th and the first two days previously.

EUSTACE SHIPMAN.

LAST year (Vol. XXI., p. 263) I recorded the finding of two heavily incubated eggs of the Stone-Curlew (*Burhinus æ. ædicnemus*) on April 28th, 1927, and estimated that this

clutch must have been complete by about the first week in April.

This year on April 8th, 1928, I watched the territory of the same pair of birds for over two hours without seeing or hearing anything of them. Four days later, on April 12th, I found the two eggs (of exactly the same type as those of 1927), making the *latest* possible date for the laying of the first egg April 10th.

Two other early dates for eggs of this species were two fresh eggs on April 14th, 1928, and two quite seven days incubated on April 17th, 1928, the last being presumably the earliest laid pair of the three.

RAYMOND CARLYON-BRITTON.

TURNSTONE AND CURLEW-SANDPIPERS IN HERTFORDSHIRE.

On the afternoon of September 4th, 1928, there was a Turnstone (*Arenaria i. interpres*), a bird in winter plumage and, judging by its yellow (not bright orange) legs, a young one, at one of the Tring reservoirs. During the time that I watched it—some hour and a half—it was picking up food from the surface and in the crevices in the drying mud, and every now and then it would overturn an embedded stone. It fed alone, not associating with three Curlew-Sandpipers (*Calidris testacea*) that were paddling at the water's edge, and for the most part it kept aloof too from three Ringed Plovers (*Charadrius hiaticula*) that were feeding on the drier parts of the mud-bank, although for a few minutes, desisting from its search for food, it consorted with them, and the four birds stood in a little group, dozing and preening their feathers. The Turnstone remained until September 12th, at any rate. So far as I know, this species has not been met with before in Hertfordshire.

CHAS. OLDHAM.

WOOD-SANDPIPER IN BERKSHIRE.

On August 12th, 1928, accompanied by Mr. J. P. Hardiman, I saw a Wood-Sandpiper (*Tringa glareola*) at Reading Sewage Farm. After having flushed several Green Sandpipers (*T. ochropus*), we noted a single bird at the edge of some shallow water. My companion was of the opinion that the bird was browner than the Green Sandpipers so I trained my telescope on to it. To me it seemed to have longer legs, but what drew my attention especially was a marked eye-stripe, apparently white, running well back behind the eye. At the time I was not aware that this was a distinctive feature, but as I could not recollect having noticed it in the Green

Sandpiper, on my return I referred to Thorburn's *British Birds*. This illustration proved that our bird was a Wood-Sandpiper, but I felt that confirmation was necessary, and on consulting *A Practical Handbook* I found the following reference to this species, "from top of lores to nape a white eye-stripe, streaked sooty-brown behind eye," while the Green Sandpiper is said to have, "from base of upper mandible to above centre of eye a white band, some feathers spotted grey-brown." Dr. N. H. Joy identified the Wood-Sandpiper at this locality on August 22nd and 27th, 1922, and he stated that he had been informed by Mr. Jourdain that these were the first occurrences for Berks. (*B.B.*, Vol. XVI., p. 205).

WILLIAM E. GLEGG.

LITTLE GULL IN LINCOLNSHIRE.

ON August 18th, 1928, a Little Gull (*Larus minutus*) was obtained near Saltfleet, and the following day another small gull was observed, which, although not identified with certainty, was probably another example of this species. The specimen obtained is an adult male in summer plumage except the feathers about the head, throat and neck; and these, due to moult, are about intermediate summer and winter in colour. The crown and hind neck still retain most of the black feathers of summer, but the throat is almost white, being very sparingly spotted with black. The bill is black except the basal half of the lower mandible which is an almost obscure dark red-brown. JOS. ARMITAGE.

EFFECT OF BAD WEATHER ON YOUNG KITTIWAKES IN SKYE.

THE effect of the very severe weather of July, 1928, in northern Scotland is seen in the colony of Kittiwakes (*Rissa t. tridactyla*) on Tulum Island, Skye. In the first week of July all the nests were occupied with small young. In the space of a fortnight of continuous gales and rains each nest became empty, and not one single young Kittiwake has this year been fledged. The old birds had all left the island by the end of July.

The question arises: Were the young washed out of the nests by the heavy seas, or did they succumb to the weather? Some were undoubtedly swept away, but I believe that more were lost by reason of the constant wind and rain and low temperature. The highest shade temperature during July was only 63°, whereas in July, 1927, that figure was almost daily exceeded here. SETON GORDON.

FLEDGING-PERIOD OF BLACK GUILLEMOT.

DURING the present season I have been studying closely a pair of Black Guillemots (*Uria g. grylle*) which have reared their two young beneath a boulder at the shore. On July 7th I saw the two youngsters for the first time, and they appeared to be from five to seven days old. Exactly twenty-eight days later (August 4th) they were still beneath the boulder. They were now, as far as could be seen, fully feathered and the parents were apparently coaxing them to leave the "nest" for they did not at once offer them the fish which they brought, but ran from side to side of the boulder as though tempting the young to sally forth.

I did not visit them for the next few days owing to the stormy weather, but even had they left the boulder on August 4th they would then have been beneath it certainly for four full weeks, probably for five. Considering that the young Common Guillemot (*U. aalge*) leaves its ledge long before it is able to fly it is surprising that the young Black Guillemot should become fully-feathered before venturing forth. But the Common Guillemot remains with her young at sea; the Black Guillemot leaves her young entirely to themselves once they have left the parental roof. SETON GORDON.

EARLY ARRIVAL OF NIGHTINGALE IN SUSSEX. Mr. Raymond Carlyon-Britton writes that on April 6th, 1928, he listened for some time to a Nightingale (*Luscinia m. megarhyncha*) in fine song in West Dean Woods.

AMERICAN BITTERN IN CORNWALL.—*Correction*.—Col. B. H. Ryves informs us that the example of *Bolaurus lentiginosus*, recorded on p. 68 (*antea*), was shot by Major E. N. Willyams and not by Mr. E. W. Willyams as stated.



LETTERS



BARK-STRIPPING BY ROOKS.

To the Editors of BRITISH BIRDS.

SIRS,—I read with much interest two notes on the stripping of lime twigs by Rooks (*antea*, p. 36). It would not be wise to conclude that every twig found in this condition had been barked by Rooks. I have watched a squirrel stripping twigs in a similar way for nest-building. She did the job thoroughly. The twigs she selected were young shoots, and she removed the whole of the bark from each, peeling it in narrow strips from top to bottom. Your correspondents omitted to say whether the Rooks did this or whether they took only one strip, leaving the twig still partly clothed.

CHARLES S. BAYNE.

AN AUTUMN HABIT OF THE ROOK.

To the Editors of BRITISH BIRDS.

SIRS,—Just forty years ago this September I first noticed the peculiar habit of the Rook, exactly as described by the Rev. E. U. Savage (*antea*, p. 57). I was spending three days in a field close to Westenhanger Castle (near Hythe, Kent) and on September 10th, 11th and 12th, about 12 o'clock on each day, witnessed this exhibition with great interest for the first time. Since then, for many years in the same month, I have seen it at the following places: Hunstanton, Norfolk, Albury in Surrey, and more often still whilst living near Farnham, Surrey.

ARTHUR R. GILLMAN.

To the Editors of BRITISH BIRDS.

SIRS,—I have on several occasions observed the displays of Rooks, very much as described by the Rev. E. U. Savage. The birds that I have noticed belong to a small roost of about thirty pairs, situated about 350 yards from my house in Mawgan-in-Pydar, N. Cornwall.

I have kept no notes of the dates of these antics, but I do know they occur sometime after the parents appear to have ceased to feed the fledged birds.

B. H. RYVES.

MULTIPLE NESTS.

To the Editors of BRITISH BIRDS.

SIRS,—With reference to the various records of multiple nest-building and Mr. Jourdain's note thereon, the Rev. W. S. Picken, rector of St. Martins-by-Looe, wrote to me, on June 7th, 1922, that a pair of Spotted Flycatchers began a nest in a wistaria against his house, but left off, and later on built in an iron shoot that runs round the slate roof of the washhouse. Thinking they might be washed out if it came on to rain, he told the gardener to see if he could not put a projecting slate to carry the roof water over the nest. When he went up a ladder to do so he found six nests, side by side, that the Flycatchers had built during the last week. Three were lined and finished, and one of them contained four eggs; the three other nests were quite perfect except for the lining. The gardener brought down the length of iron-shoot with the nests in it for him to see. After being replaced the hen sat on the one that had the eggs.

A. H. MACHELL COX.

To the Editors of BRITISH BIRDS.

SIRS,—In 1923, in Mawgan-in-Pydar, N. Cornwall, I made a record similar to that described by Mr. A. W. Boyd (*antea*, p. 85). A Pied Wagtail built three nests in a small disused pigeon coop—there was no room for more—and reared a brood of six in one nest, and a second brood of five in one of the others.

This year (1928), a Blackbird built two nests close to or within the territory of the pair described (*antea*, p. 87), the cock of which objected each time to the intrusion, so a third nest was rapidly built equally close to the established territory of another pair, who did not then appear to resent the trespass, for a brood was reared in it. Undoubtedly territorial rights are sometimes the cause of multiple nest-building.

B. H. RYVES.

[The last case seems hardly to come under the same category as the "multiple" nests already recorded as the three nests were built successively and not simultaneously and each would have been occupied but for *force majeure*.—EDS.]

REPORTED SEX DIMORPHISM IN NESTLING SKY-LARKS.

To the Editors of BRITISH BIRDS.

SIRS.—An agricultural labourer in the neighbourhood of Andover, Hants, informed me that, before the war, he used to take Sky-Larks (*Alauda a. arvensis*) as cage birds. He stated that it was a matter of common knowledge amongst his friends that the spots at the base of the tongue of male nestlings were much better defined than in the female, in which they might even be absent.

On July 23rd, 1928, four nestling Larks were brought to me. In one of these the basal spots were as intense as that at the apex of the tongue; in another the intensity was not quite so great, and the other two had ill-defined basal spots. The man stated that the first was a male, the other three being females.

I took the opportunity of dissecting these birds, and found that the first and last two birds were males, and that the bird with spots of intermediate intensity was a female. I do not know if the belief in sexually dimorphic coloration of the tongue in the nestling Lark is widespread, but, if it is, this negative observation may be of interest.

Of course I realise that the numbers are not sufficient to make any generalization, but if any nests are destroyed during mowing, perhaps someone would be kind enough to verify my observation.


J. R. GROOME.

FULMAR PETREL NESTING INLAND.

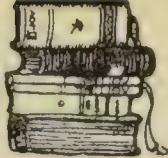
To the Editors of BRITISH BIRDS.

SIRS,—It is of interest to hear that a Fulmar colony has established itself inland in Scotland, because in Spitsbergen the Fulmar Petrel is mainly an inland nesting species. To the naturalist traversing one of the valleys of that country—Ebba Valley for example—the most noticeable bird is the silent-flying Fulmar. The birds are flying in from the sea, or out into the sea, to search for food for their young, which are reared on the ledges of the precipitous hills. The Fulmars sometimes nest actually above the snow line, and there must be nests at the 3,000 and even the 4,000 feet level. Here the young Fulmars are reared in a region of snow and ice, with glaciers far beneath them, and the eternal snowcap above them.

SETON GORDON.



REVIEWS



Report on Scottish Ornithology in 1926, including Migration. By Evelyn V. Baxter and L. J. Rintoul. (Reprinted from *The Scottish Naturalist*, 1927, pp. 133-148, 165-187.)

THIS Report appears in its usual excellent form and contains much valuable information about birds in Scotland in 1926. The observations, supplied by a number of observers, have been co-ordinated and commented on by the authors of the Report with their usual care and skill. The following are the more important notes which have not been referred to previously in our pages:—

HAWFINCH (*Coccothraustes c. coccothraustes*).—A single bird at Fair Isle, April 27th. A pair bred in Kirkcudbrightshire, the first breeding record for the county.

SCARLET GROSBEAK (*Carpodacus e. erythrinus*).—At Fair Isle one on April 2nd and another November 4th.

ORTOLAN BUNTING (*Emberiza hortulana*).—At Fair Isle on May 12th and November 11th.

LITTLE BUNTING (*E. pusilla*).—One at Fair Isle on October 19th.

WOOD-LARK (*Lullula a. arborea*).—At Fair Isle from November 3rd to the end of the year, as many as twenty being there at one time in December.

GREY-HEADED WAGTAIL (*Motacilla f. thunbergi*).—One at Fair Isle on November 6th.

SONG-THRUSH (*Turdus philomelus ? clarkei*).—Two pairs bred at Fair Isle.

GREEN WOODPECKER (*Picus v. virescens*).—One was seen near Megginch, Perthshire, in October. As this species has been reported on several occasions during recent years from this neighbourhood there is good reason to suppose that it is breeding there.

GLOSSY IBIS (*Plegadis falcinellus*).—Two at Islay in 1926.

GARGANEY (*Anas querquedula*).—A pair on Morton Loch (Fife) on May 12th to the end of the month.

PINTAIL (*Anas a. acuta*).—A female and a brood of downy young were seen on a small loch in north Fifeshire on June 4th by the authors of the "Report."

FULMAR PETREL (*Fulmarus g. glacialis*).—They are recorded as breeding in 1926 on the cliffs of Islay, where they have been seen for several years.

GREENSHANK (*Tringa nebularia*).—A broken egg was found on the ground in south Scotland, where these birds bred in 1925.

ROSEATE TERN (*Sterna d. dougallii*).—One at Elliot (Forfar) on September 10th.

SANDWICH TERN (*Sterna s. sandvicensis*).—Bred on the Isle of May "for the first time since the days of Jardine."

QUAIL (*Coturnix c. coturnix*).—Two nests reported from Bressay and nested in other places in Shetlands.

H.F.W.

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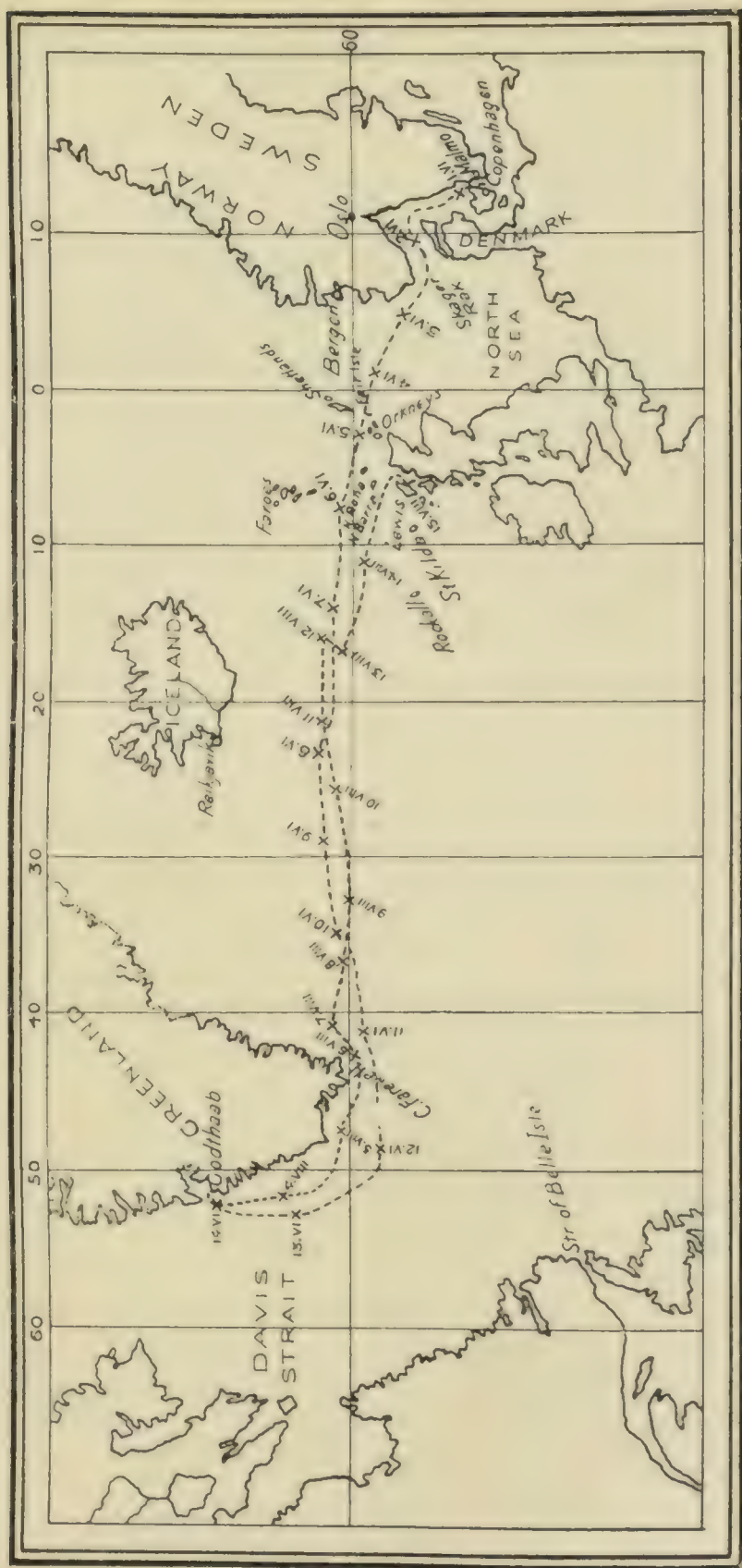
BIRD-NOTES FROM THE NORTH ATLANTIC.

BY

E. M. NICHOLSON.

THE Oxford University Greenland Expedition of 1928 had to make two crossings of the north Atlantic along a course far above the usual route for shipping between the Old and New Worlds, and as these journeys coincided roughly in time with the end of the spring and the beginning of the autumn migration, and in latitude with the supposed Greenland-Iceland route, it seemed worth while to pay special attention to the birds met with. While it was not possible to maintain a continuous watch there was generally someone to give the alarm when anything that looked interesting came in sight, and this paper is a summary of the notes made so far as they throw any light on distribution or migration. The members chiefly concerned in these observations, besides the present writer, were Dr. T. G. Longstaff, Mr. H. P. Hanham and Sir John Hanham, Bart., Mr. B. D. Nicholson and Mr. C. G. Trapnell. Since our course may be followed from the sketch map opposite it will be enough to say here that we left Copenhagen in the "Gertrud Rask" on June 1st, 1928, passed Fair Isle early on the 5th, rounded Cape Farewell on the evening of the 11th, and reached Godthaab on the afternoon of the 14th after lying twelve hours leg-bound on Fyllas Bank at the entrance to the fiord. The weather, except during the North Sea crossing, was at no time rough, and generally exceptionally calm and fine. On our return journey, in the "Hans Egede," we sailed from Godthaab on the afternoon of August 3rd, passed down the coast of Greenland as before at a distance of about 70 miles out; encountered a 9-point gale off Cape Farewell in the early hours of August 6th and did not get through it until the 9th, when we had a respite until the 11th, followed by very heavy seas and a 7-point wind against us, which so nearly exhausted our coal that we were compelled to change course and go south for Stornoway, where we disembarked on the afternoon of the 15th.

The most remarkable thing about the voyage was the large number of birds, both species and individuals, occurring all the way across. Both out and home on the days when we were furthest from land—300–400 miles from both Iceland and Cape Farewell—we identified nine or ten species—and when circumstances allowed I took counts of all birds seen to give some rough idea of the density. On August 9th a count taken for 10 sea-miles, in fair weather with wind and



SKETCH MAP TO ILLUSTRATE BIRD NOTES FROM THE NORTH ATLANTIC.
The crosses indicate the approximate noon position on the dates shown.

sea light, over 300 miles from any land, totalled 170 birds, or 17 per sea-mile. Of these 47 were Fulmar-Petrels and 123 were Great Shearwaters, 120 of the latter being in one great flock—the largest I had seen. In spite of that the count was not untypical, for the Shearwaters had previously been passed much more frequently, although not in such large bodies.

On August 10th a count taken over the same distance and at the same time in the afternoon, in similar weather conditions, still over 300 miles from land, gave a total of 34 birds, 20 being Fulmars, 8 Terns, 5 Puffins and 1 Great Skua. On the morning of August 12th, with wind N.E. blowing half a gale (7-point) and heavy seas, I began another count, but as we could only make 3 knots the captain gave up the struggle and lay to after only 5 miles had been covered by the ship's log. This count therefore was for half the previous distance; it included 44 birds of which 31 were Fulmars, 7 Manx Shearwaters, 5 Kittiwakes and 1 Gannet. We were still over 250 miles from land. While it is not claimed that these counts represent anything more than numbers of birds seen, there is no question of any serious error from such causes as birds following the ship and being counted more than once. On two of the days we had no birds following for long, and where from the direction of approach or other circumstances there seemed any doubt of this the bird concerned was ruled out. Perhaps the best check came when we stopped and lay to in the middle of a count where the number of following birds had been considerable—about 18 Fulmars and some Kittiwakes—for within a few minutes the number of Fulmars actually in sight at once exceeded the whole count for the last 5 miles. The impression received was that at the seasons concerned 5–10 per square mile would be quite a conservative estimate of the density of bird population at this latitude in the Atlantic. The remaining notes may best be dealt with under species headings. All times mentioned are by the ship's clock, which was of course altered according to longitude.

WHITE WAGTAIL (*Motacilla a. alba*).—On the afternoon of August 11th in 60° 52' N., 20° 25' W., over 200 miles south of Iceland, the nearest land, a White Wagtail came aboard in a rather exhausted state. Fortunately it was a bird of the year, and the grey crown enabled the subspecific identification to be made. Three times when it flew up it uttered the characteristic flight-note. Though common in Iceland the species does not breed in Greenland except irregularly at

one point (Anmagsalik) on the east coast. From its position this one must have been either attempting a 1,200 mile direct flight from Greenland to the British Isles, which is most unlikely, or blown out of its course somewhere along a Greenland-Iceland-Faeroes-Shetlands route. This day and the two previous ones had been calm and fair, but this afternoon the glass fell sharply and the wind freshened from the N.E.; at night there was a faint aurora and soon afterwards we were in half a gale.

About 9.30 a.m. on August 13th, after a 7-8 point wind from the N.E. had blown steadily for about thirty hours, a *Motacilla alba*, most probably of this subspecies, appeared among the Storm-Petrels flying in our wake. He circled round the ship, uttering the familiar note, apparently from mere curiosity, for he flew quite normally, without any trace of distress and seemed not to wish to alight. This was a most impressive exhibition seeing that our very seaworthy ship of 600 tons had been forced to lie to all the day before, and half-an-hour earlier had decided to give up the struggle and changed her course for Stornoway. It was surprising to find that this fragile-looking bird could not only exist, but could make headway in any direction, so far from land amid such conditions. The position was about $60^{\circ} 40' \text{ N.}$, $17^{\circ} 30' \text{ W.}$

WHEATEAR (*Enanthe ænanthe*).—About 7.40 p.m. on August 11th, not four hours after the appearance of the first Wagtail, a Wheatear, presumably of the Greenland subspecies (*leucorrhoa*), was seen by T.G.L. and B.D.N. to overtake the ship, flying past very strongly in a S.E. direction. It did not alight unless before it was observed. The wind was now very fresh N.E. Either this bird had come from Greenland, or it had been blown a long way S.W. of its true course. The powers of flight of the Greenland race, which will nest at the top of a cliff and forage for its brood at the bottom, are so impressive that a direct crossing to the Hebrides does not seem incredible. On the other hand migration begins in Greenland a clear month before it reaches Britain, according to the *Practical Handbook*, which looks more as if it were done by stages. This bird, if it got through, would have been almost as early as any recorded.

SNOW-BUNTING? (*Plectrophenax nivalis*?).—A passerine of heavy Finch or Bunting build with apparently variegated wings, possibly of this species, flew over at a good height going S.W. on June 13th in 62° N. , 52° W. , about 80 miles from the coast of Greenland. Its direction would have taken it

to Labrador. T.G.L. also saw another passerine this day. By that date most of the passerines along this coast had eggs or even young.

GANNET (*Sula bassana*).—Although on June 5th, when we passed within sight of the Shetlands and within 60 miles of Sulesgeir, Gannets were common enough, and we saw up to a dozen together, they rapidly fell off. West of 9° we saw only two on the 6th, and one each on 7th and 8th, the last at about 23° W. On the return voyage at about 60° N. $47^{\circ} 30'$ W. off the Greenland coast a Gannet was seen by the first officer. It was adult or nearly so; he knew the species well but had never seen it in those waters before. This is certainly an authentic record; otherwise we met no Gannets till about $27^{\circ} 35'$ W. when an adult came up astern on August 10th. Two more were seen on 12th ($17^{\circ} 10'$ W.) and three on 13th ($17^{\circ} 30'$ W.). Very many on 15th and 16th in the Minch. Although most of the handful seen at sea were not fully adult the number of immatures seen altogether was surprisingly small.

SMALL WADERS, sp. ?.—On the evening of June 12th two small rapid-flying waders which may have been Phalaropes or just possibly Ringed Plovers were seen passing astern over Davis Strait heading for the coast of Greenland, about 80 miles N.E.

PURPLE SANDPIPER? (*Calidris maritima* ?).—About 1 p.m. on August 9th, when the ship was rolling too badly to permit the use of glasses, a Dunlin-sized Sandpiper with dusky upper-parts and a white wing-bar flew twice across the bows in lat. 60° N. $33^{\circ} 50'$ W. something like 300 miles from land. It flew very swiftly and seemed perfectly fresh.

TURNSTONE (*Arenaria interpres*).—On August 9th one came up and flew round and round the ship, at the same time as the last. It did not seem so fresh. On August 11th, about an hour after the first Wagtail had come aboard, I went up to the bows and flushed at my feet a very tired Turnstone, which though repeatedly put up in one place or another always pitched down on some other part of the ship, refusing to leave it. There had been no stormy weather or high winds previously, though signs of their approach could now be felt.

GOLDEN PLOVER? (*Charadrius*, sp. ?).—On June 11th, within about 80 miles of the Greenland coast, a Golden, or possibly Grey, Plover was seen well to port sitting on some driftwood. Driftwood occurred all the way over, but most commonly at the meeting of currents off Cape Farewell;

judging by what we saw it seems to be used by migratory birds more freely than is commonly recognized.

HERRING-GULL (*Larus argentatus*).—Although some visited us at intervals in the Cattegat and Skager Rak out of sight of land the Herring-Gulls rapidly fell off at sea; once the Shetlands were out of sight we saw no more till we reached the Minch on our return.

LESSER BLACK-BACKED GULL (*L. f. fuscus*).—The commonest Gull from Copenhagen to the open sea. Many followed the ship, one for at least twelve miles, being recognizable by a curious wing-notch. Many more (*L. f. affinis*) occurred off the Shetlands; four (none quite mature) caught us up on the afternoon of June 6th, W. of 9° , and did not leave till they were 110 miles from land.

GREAT BLACK-BACKED GULL (*L. marinus*).—Apart from two or three seen soon after leaving Copenhagen we did not meet any of these until 70 miles off Cape Farewell, on June 11th, when three were noted at intervals. At Stornoway on our arrival (August 15th) we found the herring fleets of half Scotland concentrated, and with them an astonishing number of Great Black-backs—far more, it seemed, than could belong to that region.

ICELAND GULL? (*L. leucopterus*).—Although we found this species abundant in Godthaab fiord, even to the mouth, we never definitely identified it at sea. An immature on June 13th probably belonged to this species, and a second bird the same day more doubtfully. It was surprising to find that we could spend seven days passing down Davis Strait within 50–80 miles of the Greenland coast without seeing more of the Glaucous or Iceland Gulls.

KITTIWAKE (*Rissa t. tridactyla*).—As the transatlantic flights of marked Kittiwakes from England to North America and from Greenland to Europe and Newfoundland seemed to suggest passage on a large scale we were particularly interested in this species. They were noted on the voyage out every day except June 7th in long. 14° – 18° W. and June 10th in 34° – 38° W.—both days when we were within 150–200 miles of land. On the voyage back, after we got through the worst of the gale off Cape Farewell on August 7th, they were noted every day all the way across to Stornoway. It has been suggested that they follow ships across, but although curiosity led them to come over and fly round the “Gertrud Rask” or the “Hans Egede” they never followed very long or attempted to get much advantage out of it. On June 6th, about 50–100 miles off the Faeroes, one perched on the

mizzen-mast for a few minutes and another for a moment or two after him ; on August 11th another alighted on the same commanding position and remained there an hour or so, when three others appeared and dispossessed him. But these were the only cases observed of any attempt to rest on the ship, and both occurred on fine days. On August 12th, when we were forced to lie to until the weather improved, we had plenty of opportunities to observe the complete seaworthiness and independence of the Kittiwakes. Settling on the water freely they crouched low, their heads to the 7-point wind, and only half-rose when the white horses threatened to break right over them. Mere rollers, however immense, naturally did not affect them. They fed constantly, usually on minute objects either floating or within an inch of the surface. Only once one was seen to secure a long strip which was probably galley refuse (the instability of the ship, which, as we stood in the stern, periodically presented us with a fine sea view over the bridge, made it impossible to focus glasses, which were further defeated by the spray). In flight, with their wings much flexed, they were never seriously embarrassed. One or two of the birds seen this day, 250 miles from land, were in the "tarrock" plumage, and had presumably been fledged only a few weeks ; this was certainly the case with one which found the struggle too much for him and, coming aboard at night, allowed himself to be captured. He was so downy as to seem much larger than an adult ; in the morning we fed him forcibly on bacon and put him on deck when he rapidly revived. We marked him with a Danish ring (Skovgaard D.5121) and soon afterwards he flew off strongly, following for a few miles in our wake. On the voyage out in June the Kittiwakes generally visited us in parties of half a dozen or so, but on the way back in August only in ones and twos. They undoubtedly became rarer when we were farthest from land, and above 300 miles from shore we would not see more than four or five in a day's watching. Probably the main movement occurs later ; at any rate we were satisfied that Kittiwakes can and do find their way across the Atlantic on something like the scale which the recoveries of marked birds imply.

ARCTIC TERN (*Sterna macrura*).—Of the many Terns noted few were seen closely enough for definite identification as Arctics, although the latitude in which they occurred gives a strong presumption that all belonged to this, and not one of the similar species. On June 6th one appeared at about 100 miles off the Faeroes, and on June 9th one was seen to

alight on a drifting plank well over 300 miles from land—an interesting note in view of Watson and Lashley's experimental proof of the fatal effects upon Noddy and Sooty Terns of a night on the water.* Three more were seen about 130 miles off Greenland on June 10th, and again three flying E. 70 miles south of Cape Farewell on the following evening. On June 12th they became pretty frequent. Indications of the autumn migration were much more definite. On August 9th two were noted almost simultaneously with a migrating Turnstone and Sandpiper. On August 10th, just before 4 p.m., H.P.H. called my attention to at least ten white birds flying straight over at such a height that they could barely be picked out with the naked eye; I got field-glasses on one, and from the long wings and the flight believe it to have been a Tern. During the next hour Tern movement on a considerable scale became noticeable. A solitary bird flew W.; after a short interval a party of four crossed our bows going S.E., and one of these, just after being sighted, was seen to plunge for prey, over 300 miles from land. Not long afterwards a family—an adult and two immatures—came up and flew round the ship, going astern W. On August 11th three were observed about 5.15 p.m. and a couple and an odd bird in the evening. (It is curious, though perhaps a coincidence, what a large proportion of our Terns were seen in the late afternoon and evening.) On the morning of June 12th two were seen fishing in half a gale over 250 miles from land, and another later. These were the last; as we got nearer the British coast they dropped out, and even coming down the Minch they did not reassert themselves to the mid-Atlantic level. All this seems to suggest that the immense arctic-antarctic migration of this species takes place across the central ocean, without any attempt at coasting, which I believe is in accordance with other observations.

GREAT SKUA (*Stercorarius s. skua*).—On June 4th one was seen flying towards Foula, which was then within 20 miles or so. Another was seen next day near the Faeroe fishing banks and another on June 9th going E. over 300 miles from land. On August 8th another was identified by T.G.L. off Cape Farewell about 60° N. 38° W., and on August 10th another came up close astern and settled on the water. This was also over 300 miles from land. On August 12th, when we lay to in bad weather, a Great Skua was seen several times; he was busy pirating the Fulmars.

* J. B. Watson and K. S. Lashley, *Homing and Related Activities in Birds*, Vol. VII., Carnegie Institute. Washington, U.S.A., 1915.

ARCTIC SKUA (*Stercorarius parasiticus*).

LONG-TAILED SKUA (*S. longicaudus*).

POMATORHINE SKUA (*S. pomarinus*).

Apart from Great Skuas only two unidentified birds of this group had been observed up to noon on June 9th, when in lat. $60^{\circ} 32' N.$, $29^{\circ} 49' W.$, about 350 miles S.W. of Iceland and 400 E. of Cape Farewell, we suddenly ran into a remarkable migration. The first bird noted was a Great Skua at 1.40 p.m. ; it was followed soon afterwards by a Pomatorhine and then by a pair and an odd bird belonging to one of the smaller species, but not identified. Another passed about 5 p.m. and a definite Pomatorhine soon after. About 7 p.m. a superb Long-tailed Skua passed close across our bows. At 8.40 p.m. another unidentified Skua was noted. These nine Skuas were all flying in a rapid, purposeful manner on a course a little N. of E. which was roughly parallel with our own but in the opposite direction. Allowing for this and the fact that to-day watching was very intermittent, not covering more than half the time, there appeared to be an appreciable migration, involving at least three of the four northern species. The migration continued the next morning when the Arctic Skua was definitely added, on a larger scale. The great majority were travelling singly, but a few in pairs ; all were adults in full plumage. They were heading for the Faeroes, 1,000 miles distant, and seemed to come from the direction of Cape Farewell, the southern point of Greenland. Yet on the Shetlands, and presumably on the Faeroes also, breeding was by this time in full swing ; when we landed in S.W. Greenland just a week later the Arctic Skuas had already hatched. Further, the nearest breeding ground which these three forms have in common appears to be beyond the White Sea. The date of arrival for the Long-tailed Skua on its breeding grounds on Taimyr Peninsula is given by Seebohm as June 17th, and for the Pomatorhine as June 18th ; assuming that was their destination these birds would be just in good time. As the Pomatorhine at least winters at sea, those breeding in N. Russia and Siberia must perform some such transverse, roughly east-and-west migration to winter quarters, unless they make an enormous transcontinental journey to the Indian Ocean. Without, however, jumping to any unwarranted conclusions, it may be suggested that the migration of Skuas breeding in arctic Europe and Asia might repay further study, which might confirm or disprove the flight-line here suggested. All three species were noted either on the remainder of this voyage or on our return, the

Arctic most frequently, sometimes four or five together; the Long-tailed only once again.

RAZORBILL (*Alca torda*).—The only definitely identified Razorbills on either voyage were seen on June 5th, when they were common for some time after we passed Fair Isle.

GUILLEMOT (*Uria aalge*).—Guillemots were seen commonly on June 5th and 6th from Fair Isle to beyond 10° W. near the Faeroe fishing banks, 130 miles from land. On June 9th four others were seen, all separately, in 30° – 32° W. at our farthest point from land—about 360 miles. More were seen on June 10th up to about 36° W., when we entered the range of Brünnich's Guillemot and the Little Auk. On the return voyage none were observed, except for some probably of this form, immediately off the Greenland coast.

BRÜNNICH'S GUILLEMOT (*Uria lomvia*).—First met with a little E. of 36° on the morning of June 10th; in the evening between 37° and 38° it became very abundant about 130–150 miles from Cape Farewell, and we often passed them in ones, twos or threes so close that the line on the bill was clearly visible. More were seen on June 12th (about 48° W.). On our return not many were observed and these all off the Greenland coast.

PUFFIN (*Fratercula arctica*).—Seen off Fair Isle and for the next 100 miles or so, the Puffin dropped out earlier than the Guillemot before the Faeroe banks, but reappeared on June 9th, when two were seen singly about 30° W., over 300 miles from land. The next day (35° – 38°) it occurred really frequently, sometimes singly or in pairs, sometimes in little parties of up to about half a dozen. On our return the first noted were a party of five flying west in close order about 26° on the afternoon of August 10th; a single bird was seen swimming the same evening. On August 13th another was seen about 18° W., and a party of six flying birds probably of this species.

LITTLE AUK (*Alle alle*).—First met with about 60° N. 36° W. on June 10th; very abundant later on that day, often in parties of four to seven birds. They continued till June 12th in about 49° W. and then ceased. On our return they were much reduced, and were only noted in the storm off Cape Farewell.

MANX SHEARWATER (*Puffinus p. puffinus*).—A few on outward voyage between about 9° and 18° W.; fairly frequent on return about 17° – $17^{\circ} 50'$, and a few continuing till the Minch, where they became plentiful.

GREAT SHEARWATER (*Puffinus gravis*).—First met with on the morning of June 10th about 35° W.; several single birds

were seen that day, and the next day some in small parties off Cape Farewell, continuing up the Greenland coast. On our return they were much more plentiful, even at the entrance of the fiord, well within sight of land—only the Fulmars outnumbered them. Before, ten had been the largest party observed; now twenty to thirty became frequent. They remained as common till about 35° W. on August 9th, when a tendency towards much larger and fewer flocks became noticeable, the small parties and odd birds almost dropping out. One flock this day contained about 100 birds and another 120. The next day only one was seen, and except for a solitary bird on August 13th, about 17° W., these proved to be the last. Thus well over 99 per cent. of our Great Shearwaters were observed W. of 30° and all our Manx Shearwaters E. of 18° . These two were almost the only species, except the Auks, which invariably ignored the ship.

STORM-PETREL (*Hydrobates pelagicus*).—Small Petrels were seen at intervals on both voyages but were rarely identifiable. Some were probably Wilson's, but this was the only form satisfactorily recognized.

FULMAR PETREL (*Fulmarus g. glacialis*).—Not seen on May 31st on the North Sea crossing Harwich-Esbjerg, which is probably south of the range, but the commonest species practically all the way from the Skager Rak to Greenland, following the ship in varying numbers but never apparently for very long. We began to meet blue Fulmars about 30° W., but never saw above two or three in a day till round Cape Farewell. On the return hardly any of these were noted; the semi-blue variety, which is "blue" above and dingy below, was not uncommon in the west part of the Atlantic, and a variety which is "blue" above and white below was very common. On August 12th one was captured on deck and marked with a Skovgaard ring. It could neither rise from the deck nor stand upright. Although not very common far out at sea the Fulmars were surprisingly well distributed, and it is doubtful if we were ever out of sight of some all the way across. They sometimes followed us after dusk; J.L.H. caught a glimpse of one while we were watching the aurora on the very dark night of August 12th, and other cases were observed. There is nothing to prevent the Fulmar from crossing the Atlantic as often as it likes.

The captain and officers, both of the "Gertrud Rask" and the "Hans Egede," very kindly gave us many facilities, and determined the position and distance from land of any notable occurrences. In addition, the first officer of the

"Hans Egede" was able to give a good deal of information about birds on previous voyages along the same course. He said that small land birds often came aboard in the North Sea and on one trip off Cape Farewell, but not in the open Atlantic. Once an "Iceland Falcon" came aboard in mid-Atlantic and was found on the rigging in the morning. Another officer gave an interesting and circumstantial account of a transatlantic journey by a small gull - probably a young Kittiwake. He was on a sailing ship which took two months to cross from the Faeroes to Newfoundland; it joined them with a broken wing about three days out and followed in their wake, mostly by swimming, all the way to Newfoundland Banks, where they met a French fishing smack with a lot of attendant birds and lost it. It used to come alongside and be fed on spoiled margarine; he said it grew larger during the voyage and could fly well when it left. It drove off all the other birds. The ship went very slowly because it had a broken mast. This account of an actual observed crossing seems worth repeating, although the case of a bird with a broken wing following a ship with a broken mast across the Atlantic can hardly be of common occurrence.

To sum up, our observations give some reason for believing that not only the Kittiwake but the Fulmar, Puffin, Guillemot and all four Skuas may frequently cross the North Atlantic, as they are certainly capable of doing. In addition, either the migration of small passerines and waders is fairly considerable, or the unfavourable weather conditions during our return voyage drove a larger number of wanderers to visit our ship than one would expect to find in the middle of the North Atlantic at the outset of the autumn passage.

THE " WING-CLAPPING " OF THE NIGHTJAR.

BY

T. A. COWARD.

EVERYONE who has closely observed the Nightjar (*Caprimulgus europæus*) in flight, especially when it is indulging in nuptial display, must have noticed that occasionally it produces a sharp cracking sound, which is mechanical rather than vocal. This sound has been repeatedly attributed to the striking together of the tips of the wings, but this, I am sure, is not the correct explanation. Similar sounds are produced by the Short-eared Owl (*Asio flammeus*) and Wood-Pigeon (*Columba palumbus*), and, I believe, in exactly the same way. The wings are thrown sharply upwards and at once brought down with considerable speed and muscular strength; the sound is similar to that produced by the cracking of a whip-lash. That the soft feathers of either Nightjar or Owl could be struck together so as to produce so noticeable a sound seemed to me impossible. I have never managed to get a satisfactory view of the Nightjar on the wing so that I cannot affirm that the tips are not struck together. With the Short-eared Owl, however, I felt certain that the tips did not meet either above or below the body, and I am quite satisfied that during the nuptial flight of the Wood-Pigeon, when the wings crack, there is no contact. It is true that efforts to make a detached wing crack by imitating the action of cracking a whip produced very slight results, but it must be remembered that my muscles did not act directly on the wing like the pectoral muscles of a bird, and, what is more important still, that wing was not alive.

When in 1919 I expressed my opinion about all three species in my *Birds of the British Isles*, my friend Mr. Irvine Whittaker of Heywood wrote telling me that he agreed with my view. He has now satisfied himself by further observation, and has kindly added a note in support of the whip-lash idea.

It is not necessary to mention all the writers who have affirmed the wing-clapping explanation, but the statements of some of the leading historians of birds may be quoted. Macgillivray says, on the authority of Durham Weir, that the Nightjar "like some of the pigeon tribe, strikes the points of the wings so forcibly against each other as to be heard at a considerable distance." I find no mention of the crack in the first and third editions of Yarrell's "History," so presumably the observations in the fourth edition may be

attributed to Newton, who edited this volume. His remarks are most interesting, for he was evidently puzzled. "On the wing . . . the cock occasionally produces another and equally extraordinary sound, which by some excellent observers has been called a squeak, but to the writer is exactly like that which can be made by swinging a whip-thong in the air. How the bird produces this sound is unknown, but it often accompanies a sudden change in the direction of flight, and especially a sudden shooting aloft which ends in a downward glide. When disturbed from rest, something of the same kind may also be often heard, but then it would seem to be the result of smiting the wings together, though at other times the flight is noiseless."

Seeböhm is less clear, for he talks of "a whooping sound ; but how this is performed, whether by the throat or the wings, is at present unknown." Sharpe, next to publish, refers to "a cracking noise, which is apparently produced by striking its wings together over its back, after the manner of a Wood-Pigeon." Saunders, in 1899, says that "the wings are sometimes brought into contact and produce a loud clap," and Dr. Eagle Clarke, in the new edition, adds the words "above the back" after "contact."

Kirkman gives two second-hand observations, the first by Dr. Heinroth who watched the bird in captivity during display: "the enraptured bird flying in a fierce frenzy through the room, smiting its wings with resounding force above its back." The other is on the authority of Ussher and Warren: "When about to smite the wings the Nightjar slackens his pace, gives a kind of leap in the air, at the same time straightening the wings, and striking the backs of them together." Finally, in the *Practical Handbook*, Oldham says: "A loud clap is often produced by bird in flight smiting its wings together above its back."

Similar repeated assertions of wing-smiting are made about the Short-eared Owl and Wood-Pigeon, but it is unnecessary to quote them.

Newton and Ussher and Warren both refer to the visible rise or "leap in the air" of the bird ; this anyone may observe in the Wood-Pigeon. In the Owl that I watched the lift of the body, caused by the downward stroke of the wings, was very noticeable.

When so many acknowledged authorities make similar assertions it seems presumptuous to express an opposite opinion, yet I believe that Mr. Whittaker's observations confirm my theory, and hope to hear unbiassed opinions.

Note by Mr. I. Whittaker.

During the past spring I have spent considerable time observing Nightjars and have obtained unusually good views of birds flying about at sundown. Watching them from only a few yards distance I discovered that in making the peculiar cracking noise with the wings the so-called "wing-clapping"—the wings did *not* actually meet, neither as they were thrown upwards nor downwards; thanks to the comparatively good light and the fact that the birds were silhouetted against the sky I saw this quite clearly and without any suggestion of doubt. It would appear, therefore, that this mechanical sound is not produced by the wings striking together over the back as is often stated.

IRVINE WHITTAKER.

NOTES

THE INCUBATION- AND FLEDGING-PERIODS OF SOME BRITISH BIRDS.

IN the following cases during 1928, from west Sussex, the period of incubation has been calculated from the day on which the last egg was laid until the day or days of hatching. The fledging-period from the day or days of hatching until the day or days of departure from the nest :—

Species.	Incubation- period in days.	Fledging- period in days.	Total in days.	Period of year of observation.	No. of eggs in clutch.	No. of young to leave nest.
Chil Bunting (<i>E. cirrus</i>) ...	11-12	—	—	August	3	none
Reed-Bunting ⁽¹⁾ (<i>E. s. schæniclus</i>)	13	10	23	May-June	4	2
Blue Titmouse (<i>P. c. obscurus</i>)...	13-14	16-17	30	April-May	8	8
Sedge-Warbler ⁽¹⁾ (<i>A. schænobænus</i>)	13-14	11-12	25	May-June	5	5
Reed-Warbler ⁽²⁾ {	11	—	—	June	4	none
(<i>A. scirpaceus</i>) ... {	11-12	11-12	23	July	4	4
Wren (<i>T. t. troglodytes</i>)	14-15	16-17	31	June-July	5	5
Cuckoo (<i>C. canorus</i>)	—	22	—	June-July	1	1
Long-eared Owl (<i>A. o. cius</i>) ...	—	24	—	April-May	4	2
Moorhen (<i>G. c. chloropus</i>)	21-22	—	—	April-May	8	8

RAYMOND CARLYON-BRITTON.

ROSE-COLOURED STARLINGS IN FLINTSHIRE.

ON August 18th, 1928, at a point about three miles beyond Mostyn on the estuary of the Welsh Dee, I watched two Rose-coloured Starlings (*Pastor roseus*) feeding with Starlings in a swamp close to the sandhills. One bird appeared to me to be an adult female, having the pink on the upper and lower parts decidedly dull but perfectly distinct. The other appeared to be almost entirely dark brown above with light spots and edgings on the tail; and, but for the presence of the rosy bird, I should probably have overlooked it.

Under the glasses, however, it appeared clearly to be not a common Starling. The crown-feathers of this bird were no more elongated than those of a common Starling with

(1) Same pairs of birds reared a second brood in July.

(2) First and second layings of same pair of birds.

crest erected, but in the pink bird were quite clearly seen to be much longer. They were, however, nothing like the length of the crest-feathers of the adult male, which bird I have both seen and handled in Turkey. S. W. P. FREME.

ASSOCIATION OF REED-BUNTINGS AND MEADOW-PIPITS ON MIGRATION IN AUTUMN.

ON September 17th, 1928, about half an hour after sunrise, I saw at Aldeburgh, Suffolk, a party of Meadow-Pipits (*Anthus pratensis*) feeding in a strip of gorse (particularly among some which had been burnt), and with them were Reed-Buntings (*Emberiza schæniclus*) in the proportion of, I estimated, about one to five Pipits. I could not say of what sex they were. There were also one or two Larks. The same association but on a smaller scale was to be seen about the same time and in the same spot two days later. The Buntings frequently chased any Pipit which came very near.

The association of Reed-Buntings with Meadow-Pipits on spring migration is noted in the *Practical Handbook* and in Coward's *British Birds*, but no mention is made of it as occurring on the autumn migration. JOHN H. HAY.

TREE-CREEPERS' NESTS IN BUILDINGS.

IN April 1926, in my garden in Mawgan-in-Pydar, N. Cornwall, a Tree-Creeper (*Certhia f. britannica*) began building deep among a pile of fuel-logs stored inside a rough, low, detached shed. There happened to be a crevice between two of the wall planks, through which entry was effected. When the nest was half constructed, a Wren (*Troglodytes t. troglodytes*) built just within the crevice, thus blocking it up. The Tree-Creepers then selected the sloping slate-roof of a temporarily unoccupied house, some 50 yards from the shed. The nest was placed at the base of the north side of a chimney-stack, the only meagre head-cover being a thin slate that projected three inches beyond the chimney wall. Though climatic conditions were generally unfavourable, a brood was safely reared. B. H. RYVES.

[It is not uncommon for the Tree-Creeper to build between the crevices of wooden sheds, especially when the planks or logs are left rough. Nests in buildings are much rarer, but J. H. Gurney has recorded one in a coal cellar wall and J. Whitaker mentions one under lead on a greenhouse wall and close under a bedroom window (*Notes on Birds of Notts.*, p. 57).—F. C. R. JOURDAIN.]

DISTRIBUTION OF MARSH-TITS IN FLINTSHIRE.

IN November, 1927, having noted that the Marsh-Tit (*Parus p. dresseri*) was described as "possibly accidental" in N. Wales, I submitted to Mr. Witherby two black-headed birds shot at Connah's Quay, Flint. I had never seen a Willow-Tit up till that time. Mr. Witherby, in kindly identifying them as Marsh-Tits, replied that the distribution of these birds might repay investigation. I have since become familiar with the Willow-Tit, though only by examining skins, and am quite certain that this bird is only accidental, at least in Flintshire and Denbighshire. Marsh-Tits are common throughout the former county, being especially plentiful in winter. I have now examined black-headed Titmice taken in almost every part of Flintshire and have found them to be Marsh-Tits in every case. I had exactly the same results on a small shoot in Tarvin, five miles beyond Chester. Major W. M. Congreve of Trefnant, Denbighshire, tells me that he sees very few black-headed Titmice there. S. W. P. FREME.

DISAPPEARANCE OF PIED FLYCATCHERS AFTER NESTING.

IN connexion with the correspondence on this subject in *British Birds*, Vol. XX., pp. 113, 136 and 158, the following additional evidence may be of some interest.

In 1928 I had sixteen nests of the Pied Flycatcher (*Muscicapa h. hypoleuca*) in the nest-boxes in my garden in Breconshire. One was blown down; from the other fifteen, in all seventy-nine young birds flew from the nest. Thus, with the old birds and allowing for casualties there would be about 100 Pied Flycatchers leaving this garden; all going between June 15th and 21st except one late nest, from which the young flew on the 30th. Many others in addition were nesting in the neighbourhood, yet I have only once seen birds after they had left the nest. These were from a nest which had three eggs on May 11th - first egg laid about May 9th. There were eight eggs on the 20th and the young hatched between June 1st and 11th. On June 16th at 12.30 mid-day I found four young birds in the nest, one of which was very sick. Two at least were out flying about (there had been eight healthy young birds on the 15th). Both old birds were present feeding the nestlings, and the hen twice in her flight turned more or less towards one of the flying young ones. The latter took voluntary flights of ten yards or more. At 2.30 I found the sickly young bird dead in the nest but the

other three still there also. One of the flying young came and alighted at my feet ; I put it back into the nest, but within five minutes it flew out— a flight of say 15 yards. Then another flew from a tree and alighted near me ; and soon flew again and then once more both flights away from the neighbourhood of the nest and about 15 yards each. The last time the bird went into long grass. I watched for a long time during the afternoon but never saw any of the fliers again nor the old hen ; but the cock came and fed the young still in the nest from time to time. The feeding of these older nestlings is not I think so frequent as when they are younger, allowing for the fact that only one of the parents was doing it. I think on the other hand the feeds are larger, *i.e.*, more caterpillars and large flies or moths. As regards the " fliers," of which there had certainly been four, I could only make sure of seeing two, and these showed no desire at all to keep together or to keep near the hen. But it looked rather as if after trying their wings a few times they got into the long grass and the hen may easily have collected them together there. On the other hand, the cock seemed to confine himself to attending to the young in the nest. The latter had left the nest when inspected on the morning of the 17th. There was one dead bird left in the nest, so it is certain that seven flew, *i.e.*, four were out at 12.30 on the 16th even if I only saw two of them. The period from first egg to flight appears to have been thirty-eight to thirty-nine days. The average time from laying of the first egg to departure of the young from fifteen nests this year was 36.6 days, varying from thirty-three to forty-two days, but the number of young reared does not appear to be the cause of this variation.

In another box there were five healthy young birds on June 18th, three on the 19th, and all were gone on the 20th. On the 19th the cock only was feeding the three, while the hen and the other young were not to be seen. Another box had seven young on June 18th, six on the 19th, and all were gone on the 20th. On the 19th both cock and hen were feeding and the one young bird which had left the nest was not visible, but possibly it had died outside.

As compared with young Spotted Flycatchers (*Muscicapa s. striata*) the young were neater looking and not so " fluffy " in appearance, the breast was very definitely spotted and the back had the effect of being barred, whereas the young Spotted Flycatchers had whiter breasts - less spotted, and the back and wing-coverts were uniform plain brown.

C. VENABLES LLEWELYN,

RED-BREASTED FLYCATCHER IN NORFOLK.

A RED-BREASTED Flycatcher (*Muscicapa p. parva*) was shot at Cley in the bushes by A. B. Carter on September 15th, 1928, the wind having been N.E. for several days. He noticed the large amount of white in the tail and the absence of that colour on the wing. The flight was short and jerky.

E. C. ARNOLD.

ONE CUCKOO VICTIMIZING SEVERAL SPECIES.

I RECENTLY had the pleasure of looking through, with Lieut.-Colonel J. S. Cameron, a number of eggs of the Cuckoo (*Cuculus c. canorus*) collected in his youth by his father and himself round their home near Ashford, Kent. This collection contains a series of thirteen eggs laid by one and the same Cuckoo over a period of seven years in the nests of no less than seven species of fosterer. I think the data are so interesting as to be worthy of record and I have Colonel Cameron's authority to send this note.

On May 4th, 1895, one of the Cuckoo's eggs was found in the nest of a Chaffinch (*Fringilla c. cælebs*) with one egg of that foster parent. On June 5th, in the same year, the nest of a Blackcap (*Sylvia a. atricapilla*) was found in the grounds containing two eggs plus one egg of the Cuckoo, and on June 19th the nest of a House-Sparrow (*Passer d. domesticus*) high up in a hawthorn tree contained one egg of a House-Sparrow and one egg of the Cuckoo. Colonel Cameron tells me that the behaviour of the female Cuckoo about that time made him feel certain that an egg had been laid somewhere thereabouts and after hunting in all the known nests the egg was found in this House-Sparrow's nest. The next day, June 20th, 1895, the nest of a Robin (*Erithacus r. melophilus*) was found without any eggs of the Robin but with two Cuckoos' eggs, one of which was laid by the bird about which this record is concerned.

In 1896 the first of this Cuckoo's eggs found was on May 6th in a Robin's nest with five eggs of the Robin. Two days later another Robin's nest containing four eggs was also found with another egg of this Cuckoo. On May 21st the nest of a Whitethroat (*Sylvia c. communis*) was found with one of this Cuckoo's eggs alone in the nest; a Whitethroat's egg had previously been seen in the nest but this had disappeared and had doubtless been removed by the Cuckoo. On May 28th the nest of a Willow-Warbler (*Phylloscopus t. trochilus*) with three eggs and one of the Cuckoo was found.

The only egg of this Cuckoo found in 1897 was on June 21st in a nest of a Chiffchaff (*Phylloscopus c. collybita*). This

nest was in a branch of a fir tree about one and a half feet off the ground, and contained also three eggs of the Chiffchaff.

Again in 1898 only one of this Cuckoo's eggs was found but that in extremely interesting circumstances. On May 17th in that year there was found in a bank in a field (I have recently seen the site) a Robin's nest containing a Cuckoo's egg—an egg from a different Cuckoo from that which we are recording. The egg was taken and replaced by a House-Sparrow's and on the following day the nest contained in addition an egg of the Cuckoo of which we are writing. This Cuckoo's egg was also taken, thus leaving alone in the nest the House-Sparrow's egg. On each of the three following days a Robin's egg was laid, so that on May 21st the nest contained the House-Sparrow's egg and three Robin's eggs. The Robin began to sit on these eggs on the 22nd and on the 23rd the three Robin's eggs were taken, leaving alone the House-Sparrow's egg. On the 24th the House-Sparrow's egg was missing and in its place there was laid another egg of the Cuckoo which first laid in the nest on the 17th. Evidently the Robin had laid an egg on the 17th and again on the 18th, and these eggs were doubtless removed by the two Cuckoos which in turn had laid on these two days. Altogether, therefore, three Cuckoos' eggs, two by one Cuckoo and one by the bird of which we are making this record, were laid in this Robin's nest.

In the year 1901, three more eggs of this Cuckoo were taken on May 24th, June 6th and June 8th respectively, each time in a Robin's nest from which four eggs were taken.

This accounts for the thirteen eggs laid by the same Cuckoo over a period of seven years and all of them were in nests within an area of at most 100 acres. It would seem that, though this Cuckoo may have eventually settled down to victimize only the Robin, in its earlier years it showed an unusual lack of discrimination.

EDGAR CHANCE.

HERON KILLED BY MUSCOVY DUCK.

MR. G. KELSEY, Brookfield, Yately, Hants, on August 16th, sent in to Mr. Clifford, taxidermist, Christ Church Road, Reading, the body of an almost adult Heron (*Ardea c. cinerea*) with a note that it had been killed by a "Muscovie duck."

The plumage and body showed heavy bruising, but no shot marks, nor was any shot found in the wounds on skinning. It apparently had been caught and held by the neck and battered to death, as stated by Mr. Kelsey, on August 15th, 1928.

H. M. WALLIS.

DUCK ON CHESHIRE MERES IN SUMMER—1928.

DURING the summer months, duck of several species occur from time to time on the Cheshire meres which do not breed in or near the district, and even among others that do breed there is often present a number of non-breeders.

On August 12th, for example, a Tufted Duck (*Nyroca fuligula*), marked in 1927 as a young bird in a much higher latitude (exact particulars of which I am not yet at liberty to disclose), was shot on Witton Flashes, Northwich—one of a bunch of Tufteds I had seen there throughout the summer, none of which to my knowledge nested. On August 4th on Rostherne Mere I saw a Tufted Duck swimming with two recently hatched youngsters, and at the same time there were on the Mere two groups of duck which were doubtless non-breeders. Possibly most of these (like the marked bird) had been hatched in the previous summer and had not come to maturity.

One Sheld-drake (*Tadorna tadorna*) only was seen this summer - on June 6th by Mr. J. Moore on Marbury Mere, near Northwich.

An interesting occurrence was that of a pair of Garganey (*Anas querquedula*) on Rostherne Mere on July 8th. The birds rose from under the bank within a few yards and left no doubt of their identity. The drake was going into eclipse and lacked the eye-stripe, but the pale grey on the wing and definite white bands on either side of the speculum were most distinct and it was easy to pick it out with glasses when flying with other duck half a mile away. Both of them were very wild, and finally rose high and flew off to the north-west in company with a brown Shoveler (*Spatula clypeata*). The Garganey has not previously been recorded in Cheshire in summer, though a pale-winged bird I saw on August 20th, 1921, among a flock of Teal at Marbury Mere was almost certainly one.

Shovelers (*Spatula clypeata*) occurred on Marbury and Rostherne Meres in every summer month, but the only nest by the meres of which I had evidence was one in a hayfield by Oakmere; the nest was destroyed when the grass was cut and the eggs hatched by a hen; on July 17th I saw the only survivor.

I saw no Pochards (*Nyroca f. ferina*) this year in May or June and a few only in July on Marbury and Rostherne Meres, but by August 11th there were thirty or forty on Rostherne and a few on the other waters.

The last pair of Wigeon (*Anas penelope*) was seen on Marbury

Mere on April 14th, but on May 20th there were two ducks on Witton Flashes and from June 18th to August 12th I always saw a solitary duck there ; it could fly strongly enough and there was no sign that it was in any way a cripple. On July 16th three Wigeon, a drake in eclipse and two ducks, appeared on Marbury Mere and were seen by Mr. J. Moore and myself. It was not till September 15th that three more Wigeon appeared, and on the 23rd there were nine.

Five Goldeneyes (*Bucephala c. clangula*) on May 1st on Marbury Mere were the last of the wintering birds, but a crippled duck remained and to our surprise was joined on June 23rd by a drake in partial eclipse, which stayed with it throughout the summer and is still there at the time of writing. This drake can fly very strongly and swiftly and is obviously a sound bird.

As noted in previous years a few Common Scoters (*Oidemia n. nigra*) appeared : I saw an adult drake on Witton Flashes on June 20th and three there on June 24th ; on July 9th Mr. J. Moore saw a drake on Marbury Mere and another on August 1st, and on July 16th I saw a pale-faced bird there. Mr. T. A. Coward told me that a drake I saw at Rostherne on August 4th was still there on the 10th. A. W. BOYD.

GARGANEY BREEDING IN CAMBRIDGESHIRE.

I HAVE been fortunate this year (1928) in seeing the nest of a Garganey (*Anas querquedula*) in Cambridgeshire. It was on a small fen not far from Cambridge. I saw the old birds throughout the breeding-season and flushed the hen bird from the nest in short grass in a meadow. She shammed injury, giving a good view, and the eggs and down were characteristic.

The eggs hatched out about May 27th, but the nest was trodden on by cattle so that only one young bird got away.

M. C. W. DILKE.

FERRUGINOUS DUCK IN MIDDLESEX.

ON September 24th, 1928, at Staines Reservoirs, I saw a pair of Ferruginous Ducks (*Nyroca nyroca*). By careful stalking I got within ten yards of the birds, and with my glasses could pick out all the salient features (white iris, dark chestnut head, etc.). A mistake was impossible at such a distance.

When the birds saw us they swam slowly out into the reservoir, to be lost amidst the huge numbers of Pochard, Wigeon, Mallard, Teal, Tufted Duck, and others.

I believe that this is the first record for that reservoir, if not for the county.

T. H. HARRISON.

COMMON SCOTER BREEDING IN SHETLAND.

IN 1928 I saw Common Scoters (*Oidemia n. nigra*) on three lochs in an area about four miles across on the mainland of Shetland. On June 24th there were one drake and three ducks on one loch, which I will call A. These flew to another loch (B) where the drake was joined by a fourth duck and flew back to loch A, leaving the three odd birds. On June 26th all five birds were on loch A. On a third loch (C), which we had not visited before, was a pair of Scoters which we watched displaying till they flew away to sea. Then another duck Scoter swam out from a patch of reeds in which we found a nest and two eggs. The nest was on very swampy ground in a tuft of rushes a few feet from the water. This bird was joined by a drake.

On June 27th there were no Scoters on loch C, but there was a third egg in the nest, which contained a little down, both eggs and down being characteristic of the species.

Although this was the only nest we found there were three pairs and three odd ducks on this group of lochs.

The display which we witnessed on June 26th may be described as follows.

The pair of birds would be swimming close to each other. The drake faced the duck, stretched up his neck to its full height, then sank his breast in the water and stuck up his pointed tail vertically. After this he quickly turned away and fluttered along the water up wind, rose clear for a few yards and settled again. Then he turned round, stretched up his neck to its full height, lowered it and swam quickly back to the duck. This was repeated over and over again, the flight being sometimes reduced to a mere flutter. Once they flew round and the drake called a low clear whistle "pu."

M. C. W. DILKE.

EARLY BREEDING OF GREAT CRESTED GREBE.

ON a Norfolk mere on April 17th, 1928, I saw two young Great Crested Grebes (*Podiceps c. cristatus*), at least four days old, swimming with their parents, and at another nest the first chick had hatched the day before and lay dead. There had been several snowfalls about this time. The remaining three eggs in this nest hatched out at intervals of two days and all survived. Allowing for the incubation-period, the first egg in these nests must have been laid late in March.

On the other hand, at Ruislip Reservoir, Middlesex, on August 15th, 1928, two pairs were still incubating eggs, while a third had young not more than four days old, and on

August 22nd one bird was still sitting. August nests have been recorded on many occasions, but three late birds breeding together seems unusual.

DAVID L. LACK.

[For instances of early breeding see *Br. B.*, VIII., p. 292 (four eggs on March 27th, 1915, etc.). Cf. also *op. cit.*, II., p. 242, where eggs and downy young in September are also recorded.—F. C. R. JOURDAIN.]

GREY PHALAROPE IN MIDDLESEX.

ON August 15th, 1928, I saw a Grey Phalarope (*Phalaropus fulicarius*) swimming quite close in on one of the reservoirs at Staines, Middlesex. It was in winter plumage, being white with pale grey wings, black at the extremities, and a black spot near the eye.

DAVID L. LACK.

RUFF IN MIDDLESEX.

ON September 8th, 1928, being accompanied by Mr. J. P. Hardiman, I identified an immature Ruff or Reeve (*Philomachus pugnax*), probably the latter judging by the size, at Littleton Reservoir. It was the tamest of birds, permitting of a very close examination and was completely silent.

Although I have not made an exhaustive search it would seem that this species is scarce in Middlesex. I cannot find a single record in *British Birds* since its inception. Apparently it occurred, at one time, with some degree of regularity at Kingsbury Reservoir, for Harting states (*Birds of Middlesex*, p. 184) that a dozen had been obtained there and others seen from 1838, when this reservoir was formed, to 1866. F. D. Power shot one in this locality on September 16th, 1871 (*Zool.*, p. 2852).

WILLIAM E. GLEGG.

LITTLE GULL IN MIDDLESEX.

AT the Staines Reservoirs on October 6th, 1928, Mr. F. R. Finch and I watched for some time an immature Little Gull (*Larus minutus*). The bird had a good many dark feathers on the crown and in other respects showed that it had not completed the change from juvenile to first winter plumage. The central pairs of tail-feathers had the brownish-black terminal bands like the outer ones.

The Little Gull, which was first described as a British species by Montagu from a specimen shot on the Thames near Chelsea, has not often been reported from Middlesex.

A. HOLTE MACPHERSON.

ALBINISTIC WAGTAIL IN YORKSHIRE.—Mr. J. C. S. Ellis informs us that on August 13th, 1928, he saw at the Brighouse

sewage-works at Cooper Bridge a Wagtail whose plumage appeared pure white with the exception of one or two dark mottlings on the breast. The legs, bill and eyes were, as far as could be seen, normal in colour. As all the bird's companions were Pied Wagtails (*Motacilla a. yarrellii*) Mr. Ellis considers the bird was of that species.

GANNET INLAND IN YORKS.—Mr. C. H. Wells informs us that an immature Gannet (*Sula bassana*) was for some days observed flying about the golf course at Rothervale, just outside Sheffield, and was eventually picked up. It was fed on herrings but was unable to fly away and died on September 27th. There have been a fair number of previous inland records for the county.

STOCK-DOVE NESTING ON A HOUSE.—With reference to Mr. J. S. Elliott's note on this subject (*antea*, p. 114), Lord Scone informs us that for some years there has been always one, sometimes two, nests in the ivy on the walls of Scone Palace, Perth, a favourite situation utilized several times being within five feet of the window of an occupied room.

Mr. J. S. Reeve tells us that a pair has nested three or four years in a thick creeper on an inhabited house at Leadenham, Lincolnshire.

The Rev. E. Peake writes that in July, 1925, a pair of Stock-Doves made a nest of sticks in the head of a rain-water pipe, which was almost concealed by ivy, on the front of Bluntisham Rectory, St. Ives, Huntingdonshire.

PROBABLE DUNLIN OVER LONDON.—Mr. W. Cave informs us that in the morning of July 2nd, 1928, he saw flying south-eastwards over West Eaton Place, about 1,000 feet up, a compact flock of small waders. They were wheeling about at intervals showing dark and light as they turned, and had every appearance of being Dunlin (*Calidris alpina*).

HERRING-GULL NESTING ON OCCUPIED HOUSE.—Mrs. V. Tweedale informs us that a pair of Herring-Gulls (*Larus a. argentatus*) built a nest in the chimney stack of a villa at Torquay in the spring of 1928 and reared two young, which were brought down to the lawn on leaving the nest and came regularly for food to an adjoining villa. In some parts of Cornwall Herring-Gulls are semi-domesticated birds, and are practically parasitic on man, coming to be fed at the sound of a bell rung for the purpose. At Port Isaac a nest was recorded between a chimney stack and an isolated chimney pot in 1910.



LETTERS



BARK-STRIPPING BY ROOKS.

To the Editors of BRITISH BIRDS.

SIRS,—In answer to Mr. Bayne (*antea*, p. 118), I would like to say that Rooks strip the twigs absolutely clean, so that they show white from afar.

E. PEAKE.

NUMBER OF EGGS LAID BY MISTLE-THRUSH.

To the Editors of BRITISH BIRDS.

SIRS,—During the last six years I have examined twenty-six nests of the Mistle-Thrush (*Turdus v. viscivorus*) in various parts of the Isle of Thanet, Kent. I find four eggs is the usual complement. Three nests contained 5, four 3, and the remainder 4 eggs each.

BROADSTAIRS October 6th, 1928.

L. H. DAGLEY

MANNER IN WHICH YOUNG GUILLEMOTS AND RAZORBILLS LEAVE THE NESTING LEDGES.

To the Editors of BRITISH BIRDS.

SIRS,—I have read with much interest Mr. W. Aspden's notes on Puffin Island (*antea*, p. 103), particularly his description of the young Guillemot's (*Uria aalge albionis*) journey from the nesting ledge to the sea.

In Kirkman's *British Bird Book* (Vol. III., p. 28), we are told that "The usual method, according to best available evidence, is for the young birds to flutter and slide and fall down the side of the cliff to the waters below," and that "the evidence for the statement that Guillemots and Razorbills (*Alca torda*) will seize their young by the wing . . . and so carry them down to the sea is contradictory, and rests largely on the observation of fishermen, which is notoriously inexact."

Mr. Aspden's observations confirm those of P. J. MacGinley, light-keeper on the Great Skellig, whose interesting notes on the subject were received by the late R. J. Ussher and published in 1913 (*Irish Naturalist*, Vol. XXII., pp. 178, 211). According to MacGinley, when the ledge overhangs the sea the young birds are pushed off gently by the old ones—never jostled or tumbled along the face of the cliff—and keep fluttering sufficiently to maintain balance until they reach the water, on striking which they dive for a few seconds. He goes on to say that the young are only helped by the old birds when the ledge does not overhang the water, and then each young bird is held by the wing; but as soon as it is clear of the underneath cliffs the youngster is allowed to flutter down to the sea without further assistance. The screams of the young and old birds, while the journey is being made, are commented upon.

MacGinley's observations appear to have been confined to the evenings, and he states that about 25 minutes after sunset he has seen both species take their young to the sea, but remarks that it is possible that some of the young leave the ledges at sunrise, or in the early hours of the morning.

This is a subject on which very little information has been published. No doubt some of your readers are in a position to offer further comments.

G. R. HUMPHREYS.



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THE REGION FROM THE ISTHMUS OF KRA TO
SINGAPORE WITH THE ADJACENT ISLANDS

By HERBERT C. ROBINSON, C.M.Z.S., M.B.O.U.

Late Director of Museums, F. M. States.

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FIELD-NOTES FROM LAKELAND, 1927.

BY

R. H. BROWN.

RAVEN (*Corvus c. corax*).—A pair began building on a turret rock in the third week of January, and on February 24th the nest was ready for eggs. Both adults were very noisy and restless this day, but at the next visit the nest was empty, the birds were quiet, and it was evident the female had laid and had been robbed. Later in the season a pair of Common Buzzards took possession of this nest and in it reared one young bird (see under Buzzard).

The remains of two small lambs were found on a feeding place beside a nest of four young Ravens, but whether the adults had killed the lambs or picked them up dead is not known.

In late February a pair was observed to soar to a great altitude, both birds frequently calling, and one occasionally planing upside down. The apex of their soaring reached, one continued at this altitude, whilst the other began diving earthwards, either a straight descent or else with a zig-zag movement, then stalling would soar to its companion's altitude, and again dive. A similar performance was observed in the last week of August. A pair, when disturbed from an old nest which they were repairing, began soaring together, when presently the female alighted on a rock. The male continued soaring, then twice called "kroc," the female answered "kroc" and he alighted upon the rock beside her and began stroking her face with his bill.

One bird of a pair was noticed planing upside down on September 25th and October 23rd.

HOODED CROW (*C. c. cornix*).—During the autumn a flock of thirty to forty birds fed for several weeks on an uncut field of oats a few miles north of Lake Bassenthwaite.

ROOK (*C. f. frugilegus*).—Twenty-two nests examined held forty-three young, average brood 2.0 young.

BULLFINCH (*Pyrrhula pyrrhula* subsp. ?).—On January 30th a party of nine, and on December 11th one of fifteen, Bullfinches were noticed feeding on the seeds of the heather on one of the lake mountains.

CORN-BUNTING (*Emberiza c. calandra*).—In an inland locality a male was singing on January 20th, a warm sunny day after a hard frost, whilst in the coastal region on 27th two males were singing.

A young fledged bird was picked up on June 11th, an early

date. On July 30th a nest of three fresh eggs was found, whilst a meadow hay-field was being mown. A nest of two eggs was found at the foot of a hay-cock on August 8th.

SNOW-BUNTING (*Plectrophenax n. nivalis*).—A regular winter visitor to the Solway coast and the mountains of the Pennines and Lake District. The birds occur, either in small parties or flocks (largest flock forty birds), from mid-November until mid-March. On the fells they feed mainly on the seeds of the rushes, on the sea coast the seeds of the marram-grass and the sea-pink are favoured. On warm sunny days in early spring a flock will often assemble on a mountain scree and in chorus utter their trilling call-notes.

TREE-PIBIT (*Anthus t. trivialis*).—A brood of seven young was found on June 16th.

YELLOW WAGTAIL (*Motacilla flava rayi*). In the second week of May a female was observed nest-building, the male not assisting in the building but accompanying her to and fro in her search for nest materials. She gathered several beakfuls of dead grass, which was pulled from the ground, and then collected a little wool. The nest was located under a tuft of grass; five eggs were subsequently laid and four young reared. Another brood of five young was found in the third week of June in a meadow hay-field, whilst in the last week of July a pair was noticed feeding young.

PIED WAGTAIL (*M. a. yarrellii*).—The spring migration usually lasts from the last week of February until the middle of April. It is usual for the males to arrive first (occasional birds arrive paired). These frequent the tops of barns and walls and call "chissick, chissick" to attract the females. During May another migration is noticed of birds which are evidently proceeding further north to breed. These often migrate in small flocks of twenty to thirty birds and roost at nights under gorse-bushes or occasionally on branches of trees.

The autumn migration is from the second week of August until the last week of October. Many flocks, composed of adults and young, and often hundreds strong, appear to migrate during the night, for the birds have been observed, as dusk fell, to leave the fields where they had been feeding and set off on a south-easterly course.

A pair was found to be feeding their young on horse-flies and their larvæ. Another pair collected click-beetles for their brood.

PIED FLYCATCHER (*Muscicapa h. hypoleuca*).—On May 7th a pair was noticed pursuing each other about the branches

of an ash tree, and on the 28th the female was flushed from a nest of seven eggs in a natural hole in this tree. Both the adults approached within a few feet of me, calling "whit" and "whit-tic."

A brood of seven young was found on June 15th in an old hole of a Woodpecker about thirty feet from the ground in an ash tree. Both adults fed the young on small flies and moths. The same day another pair was watched feeding a brood of fledged young which were scattered about the branches of a tree when a squirrel alighted in this tree. Both adults immediately attacked it, diving down within inches of it, whilst sometimes the male appeared actually to strike it. On these occasions he uttered a note resembling the sound produced when two pebbles are knocked together. The birds never ceased their attacks until they had driven the squirrel out of the tree and some distance along the ground.

A male frequented an oak tree for about three weeks, singing and paying frequent visits to an old hole of a Woodpecker, but no female appeared and he disappeared.

WILLOW-WARBLER (*Phylloscopus t. trochilus*).—An unlined nest holding six young was found near Keswick on June 6th.

COMMON WHITETHROAT (*Sylvia c. communis*).—In the third week of June a female was flushed from a nest of five eggs placed in a hawthorn hedge at a height of eight feet from the ground.

WHEATEAR (*Ænanthe æ. ænanthe*).—A female, caught on eggs and ringed, continued to sit and reared the young; another female, when caught on eggs and ringed, deserted.

A female was noticed collecting ants from underneath small stones for a brood of young. Two nests, one with five young, the other with seven young, were thirty-five yards apart.

DIPPER (*Cinclus c. gularis*).—In the first week of February a pair began building a nest on a buttress of a bridge. Both birds assisted in building the moss portion of the nest and usually perched on a boulder in the river, where the moss was repeatedly dipped in the water, before flying to the nest. Sometimes the birds visited the nest in turn, on other occasions one bird visited the nest three times as frequently as the other. By the last week of the month the inner cup was being lined with leaves but only one bird (the female?) carried leaves, the male accompanying her on her journeys and singing from a boulder whilst she was at the nest. The female usually dipped the leaves in the water before carrying them to the nest.

KINGFISHER (*Alcedo a. ispida*).—A *Practical Handbook* describes the nesting tunnel as “generally about a yard in length,” but the average length of eight tunnels which I measured was two feet.

A pair began excavating a tunnel in a bank of a river in the last week of March. The birds worked in turn, one keeping guard on a neighbouring branch whilst the other was in the tunnel, which was subsequently destroyed.

GREAT SPOTTED WOODPECKER (*Dryobates m. anglicus*).—In a large fir plantation, where two or three pairs of these Woodpeckers are resident, several worked Scots pine cones have been found inserted in the crevices of a dead pine tree.

CUCKOO (*Cuculus c. canorus*).—A nestling Cuckoo, about six days old, was found in the nest of a Willow-Warbler, but a week later the young Cuckoo had mysteriously disappeared.

LONG-EARED OWL (*Asio o. otus*).—A brood of two fledged young was found in an old nest of a Crow in a Scots pine, and about the nest and on the ground underneath were the remains of 1 Greenfinch, 1 Song-Thrush, 1 Blackbird and 1 Rabbit.

TAWNY OWL (*Strix a. sylvatica*).—A pair nested for the third consecutive year in the same tree. Four eggs were laid and hatched but only two young reared, the other two nestlings disappearing within nine days of hatching. The female brooded the young until they were about sixteen days old. The following food was found in the nest: April 29th: 1 Song-Thrush, 1 Starling. May 7th: 1 Song-Thrush. May 16th: 1 Song-Thrush.

Another pair laid two eggs and reared two young, and on one occasion the remains of a mole was found in the nest.

BARN-OWL (*Tyto a. alba*).—A nest of one newly-hatched young and one chipped egg was found amongst the hay in a barn on April 29th, whilst on August 26th a brood of three fledged young was found in a hollow tree, which also held the remains of a rabbit.

PEREGRINE FALCON (*Falco p. peregrinus*).

Eyrie No. 1.—April 17th: Female flushed from four eggs on a rock-ledge; bird noisy and stayed about the crags; 2 Starlings, 1 Greenfinch, 1 Song-Thrush, 1 Red Grouse, 1 Pigeon. May 20th: Both adults about and very noisy as nesting-crag was approached. Brood of three nestlings, clad in white down, on the ledge. 1 Meadow-Pipit, 2 Song-Thrushes, 2 Pigeons. June 5th: Both adults present and noisy, young Falcons answering them. Three young very

pugnacious, lying on their backs and using their talons. Young have their flight-feathers developed, tail-feathers almost developed, mantles beginning, rest in down. 1 Lapwing, 1 Wood-Pigeon, 1 Moorhen, 1 Red Grouse, 1 Pigeon. June 17th: Only the adult female present, noisy, and twice swooped close at me. Young answering the female, and were perched at the edge of the ledge. They were full feathered except for a little down adhering to their mantles and heads. 1 Song-Thrush, 2 Wood-Pigeons, 3 Homing Pigeons. September 18th: 1 Curlew, 1 water-rat. October 31st: 1 Mistle-Thrush, 1 Partridge. November 24th: 2 Pigeons.

Eyrie No. 2.—January 30th: Peregrine about but no prey found. February 26th: 1 Song-Thrush, 2 Pigeons, 1 Snipe. March 27th: 1 Song-Thrush, 2 Blackbirds, 1 Common Gull. April 29th: Female flushed from three eggs on rock-ledge. Male on guard but made no outcry; female noisy. 1 Starling, 1 Song-Thrush, 1 Snipe, 2 Common Gulls. May 22nd: Eyrie robbed. 1 Blackbird, 2 Red Grouse. June 21st: 1 Mistle-Thrush, 1 Red Grouse. July 16th: 1 Song-Thrush, 1 Snipe, 1 Pigeon. August 25th: 1 Starling, 1 Curlew. September 18th: 1 Starling, 1 Red Grouse. October 16th: 1 Redwing, 1 Wood-Pigeon. November 20th: 1 Redwing, 1 Red Grouse, 1 Pigeon. December 11th: 2 Blackbirds, 1 Red Grouse.

Eyrie No. 3.—August 30th: 1 Song-Thrush, 1 Mistle-Thrush, 1 Homing Pigeon, 1 Pigeon. September 25th: 1 Wood-Pigeon, 1 Red Grouse. October 25th: 1 Song-Thrush, 2 Pigeons.

Eyrie No. 4.—February 6th: No prey, no Falcons seen. March 13th: 1 Blackbird, 1 Lapwing. April 29th: 1 Meadow-Pipit, 1 Blackbird, 1 Fieldfare. June 9th: 2 Wood-Pigeons, 1 Pigeon. July 5th: 2 Pigeons. August 20th: 1 Curlew, 1 Red Grouse, 1 Pigeon. September 8th: 1 Red Grouse. October 23rd: 1 Pigeon, 1 Wood-Pigeon. November 20th: 2 Fieldfares, 1 Pigeon.

Eyrie No. 5.—September 11th: 1 Pigeon, 1 Rabbit.

Eyrie No. 6.—January 18th: No prey, but Falcon seen. March 27th: 1 Song-Thrush, 1 Pigeon. May 9th: Female flushed from two eggs in old nest of Raven. Called a little, then disappeared. 1 Meadow-Pipit, 2 Pigeons. May 20th: Eyrie robbed. August 21st: 1 Curlew, 1 Red Grouse, 1 Homing-Pigeon, 2 Pigeons. September 25th: 1 Pigeon. October 30th: 1 Fieldfare, 1 Pigeon. November 27th: No prey. December 4th: 1 Pigeon.

MERLIN (*Falco c. æsalon*).—A pair noticed in the second

week of March, and on April 10th the male was observed flying up and down above the valley where on June 10th the female was flushed from five newly-hatched nestlings. On the 20th the male pursued a Meadow-Pipit into the valley, caught it, and flew around calling, then perched on a boulder. The female flew towards him, calling "ěp, ěp," and alighted beside him. A second later she flew towards a feeding place near the nest with the prey in her talons, whilst the male went hunting again. The young were clad in coarse down, feathers beginning to burst from quills of wings and tails. On July 7th the five young were found about twelve yards from the nest and flew away when approached. On the feeding places the remains of 1 Meadow-Pipit, 2 Skylarks, 2 Song-Thrushes. July 23rd: 2 Greenfinches, 1 Meadow-Pipit, 1 Corn-Bunting, 1 Swallow. September 8th: 3 Meadow-Pipits.

KESTREL (*Falco t. tinnunculus*).—A pair nested for the second consecutive year in an old nest of a Crow, the Hawks adding some larch branches to the nest rim. Four eggs were laid and four young reared. At one visit the remains of 1 Song-Thrush and 1 Blackbird were found in the nest.

Two other broods of young were found, one on a rock-ledge, the other in an old nest of a Magpie; the prey found at various visits consisted entirely of short-tailed field-mice. The behaviour of the adult females differed; the one used to fly away, after calling once; the other flew around the nest, calling frequently, sometimes diving down at me or hovering above.

COMMON BUZZARD (*Buteo b. buteo*).—On June 6th a Buzzard was flushed from three eggs in the nest of a Raven. A lining of rush-grasses had been added for the eggs, otherwise the nest was as built by the Ravens; there was a quantity of down about the nest-rim. On various feeding-places were the remains of four rabbits. June 18th: Down removed from the nest, but eggs unchipped. 2 rabbits, 1 adult stoat. June 26th: Three nestlings hatched, two about five days old, other three days old. During the ten minutes I was at the nest one of the eldest nestlings frequently seized the youngest by the nape of the neck and worried it, the youngest mewling piteously. On the nest-rim, which was undecorated, were the hindquarters of three rabbits and two perfect moles. July 10th: Only one nestling left, no remains of the others. Nest not decorated and held remains of two rabbits.

On May 15th a Buzzard was flushed from one egg on a grass-covered ledge and except for two small twigs there was no nest. A little down about the ledge and on a nearby feeding place several castings of frog-spawn.

A pair began repairing an old nest in the first week of February and by mid-March the nest was finished except for the egg-cup, which the female was found decorating in the second week of April with the green twigs of Scots pine. The following prey was found on the feeding places:—February 6th : 2 Wood-Pigeons. March 13th : 1 Red Grouse. April 10th : 2 Red Grouse.

From a nest of two eggs, built on a turret rock, some person took one egg, whereupon the birds deserted.

In the second week of June a nest holding three young and one egg was found. The nest-rim was profusely decorated with mountain ash twigs and held the hindquarters of three rabbits.

On June 13th a brood of two young was found ; the nest was decorated with mountain ash twigs and held the remains of 1 Meadow-Pipit and 1 rabbit. The young had their flight- and tail-feathers half developed, the mantles beginning to feather, the rest in down. On the 26th an adult flew from the nest where it had evidently been feeding the young, which were in juvenile plumage except for a little down about their heads. The nest-rim was decorated and held the remains of three rabbits.

SPARROW-HAWK (*Accipiter n. nisus*).—Prey found on the feeding blocks or, when the young have left the nest, on the nest itself, has been as follows:—

Eyrie No. 1.—June 19th : 1 Greenfinch, 1 Song-Thrush, 1 nestling Lapwing. 24th : 1 Long-tailed Tit. July 10th : 1 Greenfinch, 1 Linnet.

Eyrie No. 2.—June 27th : 1 Long-tailed Tit, 2 Song-Thrushes, 1 Blackbird. July 3rd : 1 Greenfinch, 1 Blue Tit, 1 Song-Thrush, 2 Blackbirds. 8th : 2 Greenfinches, 1 Chaffinch, 1 Long-tailed Tit, 1 Swallow, 2 Wood-Pigeons. 21st : 1 Chaffinch, 1 Great Tit, 2 Song-Thrushes. August 5th : 2 Greenfinches, 1 Song-Thrush, 3 Blackbirds.

Eyrie No. 3.—July 16th : 1 Greenfinch, 2 Song-Thrushes. August 4th : 1 Chaffinch, 1 Skylark, 1 Blackbird.

COMMON HERON (*Ardea c. cinerea*).—Food cast up by nestlings was as follows:—April 30th : About two dozen minnows, 1 chub, 2 water-rats. May 18th : 1 chub, 1 flatfish, 2 long-tailed field-mice.

On August 2nd a party of five, and on September 12th

seven, Herons were observed, with much calling, to soar to a considerable altitude and begin diving earthwards, diving in a headlong manner or with a zig-zag movement. Some stalled and began soaring after a dive of a few hundred feet, others came very close to the earth before checking their rapid descent.

PINK-FOOTED GOOSE (*Anser brachyrhynchus*).—The number of Pink-footed Geese on Rockcliffe Marsh, Solway Firth, on September 27th, could not have been less than two thousand, whilst from the quantity of feathers, principally body-feathers, but some mantle-feathers, strewn about their feeding grounds, it was evident that the birds were still in moult.

STOCK-DOVE (*Columba oenas*).—A Stock-Dove was flushed on July 31st from a nest of four eggs on the inside wall-plate of a deserted barn, and where only one pair of birds was observed during the season.

RUFF (*Philomachus pugnax*).—Three young birds with a small party of Lapwings on Burgh Marsh, Solway Firth, on October 4th.

BLACK-TAILED GODWIT (*Limosa limosa*).—A party of five near Port Carlisle, Solway Firth, on October 14th.

LAND-RAIL (*Crex crex*).—Two young Land-Rails caught on August 2nd were in full juvenile plumage except that the flight-feathers were just breaking from the quills. One young bird lay still as death in the hand, the other struggled and kicked like a Coot ; on being released both ran swiftly away.

In the third week of June a Land-Rail was noticed escorting ten downy nestlings through a pasture field.

Two nests, one with seven eggs, the other with four, were found in a rotation grass hay-field on July 18th. The nests were about sixty yards apart and the hay had been cut, turned, raked, and cocked without the eggs being damaged.

NOTES

INCUBATION- AND FLEDGING-PERIODS OF SOME BRITISH BIRDS.

THE following incubation- and fledging-periods were obtained in 1928 (A) in west Sussex, (B) in north Wilts. ; the incubation-periods being calculated from the day on which the last egg was laid and the fledging-periods from the day or days of hatching until the day or days of departure from the nest.

Species.	Incuba- tion- period in days.	Fledging- period in days.	Period of year of observa- tion.	No. of eggs hatched and or No. of young reared.
B. Rook (<i>C. f. frugilegus</i>) ...	16	—	March	5
B. Carrion-Crow (<i>C. c. corone</i>) ...	—	31	May-June	3
B. Greenfinch (<i>Ch. ch. chloris</i>) ...	—	14	May	5
B. Red-backed Shrike (<i>L. c. collurio</i>) ...	15	—	June	4
B. Sedge-Warbler (<i>A. schænobæus</i>)	12	11	May-June	6
B. Ditto ...	—	12	May-June	2
A. Mistle-Thrush (<i>T. v. viscivorus</i>)	—	15-16	April	4
A. Redbreast (<i>E. r. melophilus</i>)	15	—	April	4
A. Hedge-Sparrow (<i>P. m. occidentalis</i>) ...	12-13	—	April	4
B. Spotted Flycatcher (<i>M. s. striata</i>) ...	—	11-12	June-July	5
B. Swallow (<i>H. r. rustica</i>) ...	13-14	21	June-July	4
B. Martin (<i>D. u. urbica</i>) ...	—	20	July	4

W. D. SHAW.

RAVENS BREEDING IN TREES IN DEVON.

WITH reference to my note on this subject in Vol. XXI., p. 13, I am able to record a fresh tree breeding-site of the Raven (*Corvus c. corax*) in Devon for 1928.

On April 5th the parent birds were feeding young in a nest in one of a group of big scots firs and on May 5th the parents and three young were sitting on a wall below the nest. This site local inhabitants assured me had never been used before.

OWEN WYNNE.

CALL-NOTES OF CARRION- AND HOODED CROWS.

KNOWING I was to spend my holidays in one of the few districts in Germany where the Carrion-Crow (*Corvus corone*) and the Hooded Crow (*C. cornix*) interbreed, I decided to make special observations to come to a conclusion concerning the difference in tone of their calls.

Both Carrions and Hoodies consorted and intermingled freely, together with the hybrids, and it was not easy at first to distinguish between their frequent and persistent calls both in the mornings and evenings.

At the end of eight weeks my conclusions were that the Carrions' note is a deeper and more guttural croak, almost a bark, with more strength than the Hoodies' call, which, to my ears, appeared to be weaker and distinctly higher in tone.

The hybrids misled me frequently, for their calls were a mixture between high and low notes, and sometimes were very like the Rooks' rasping "Kaw." G. W. CALVERT.

LATE BREEDING OF GOLDFINCHES IN DEVON.

ON September 3rd, 1928, I disturbed a Goldfinch (*Carduelis c. britannica*) feeding young. On September 4th, while passing the spot again, I saw three young birds leave the nest. This is the latest breeding record I have by a long way of this bird in Devon.

I might add also that the birds began to breed earlier than is usual here this year and that there were three nests within twenty yards of my house, near Crediton, in April.

OWEN WYNNE.

BARK-STRIPPING BY HOUSE-SPARROWS.

THE communications (*antea*, pp. 36 and 118) regarding the stripping of bark from trees brought to mind an experience to which, at the time, I did not attach much significance. During the nesting season House-Sparrows (*Passer d. domesticus*) annually stripped the smaller branches and twigs of a lime tree behind my home at Stoke Newington, Middlesex. I have often watched the birds stripping off the fresh bark, some of the twigs being left bare or with partially removed strips hanging raggedly. Although I have not seen this material added to the nest I assume that it was used for this purpose. It is difficult to understand why the birds should have expended so much energy when plenty of suitable material was available. It may have been used for decorative purposes in the same way as Tree-Sparrows introduce fresh green leaves into their nests.

I cannot say if this habit was confined to one pair, but, judging by the amount of bark removed, I imagine that several pairs must have been at work.

Is it merely coincidence that in each instance the tree selected by Rooks and Sparrows has been the lime?

WILLIAM E. GLEGG.

LESSER WHITETHROAT IN PEMBROKESHIRE.

ON May 22nd, 1928, Mr. Charles Oldham and I watched a warbling Lesser Whitethroat (*Sylvia s. curruca*) in a secluded thicket near Llangwm, towards the centre of the county; and on June 6th, 1928, another in a similar situation at Moylgrove, in the north.

As there is but one previous summer record of this species in Pembrokeshire, these two occurrences are probably a further indication of the extension of its range in south-west Wales already noted in *British Birds* (Vol. XVIII., p. 266, and Vol. XXI., p. 178).

BERTRAM LLOYD.

NEST OF SWALLOW IN BOWL.

IN an outbuilding close to Fleshwick Bay, Isle of Man, on July 13th, 1928, I found a nest of a Swallow (*Hirundo r. rustica*) in a pot bowl which had been placed on a shelf just within reach and was partly tilted by a piece of sacking and



resting against the wall. The nest was built on a foundation of small decayed potatoes and contained three normal eggs, which looked opaque and obviously incubated.

JOHN ARMITAGE.

MISTLE-THRUSH LAYING TWICE IN THE SAME NEST.

ON April 16th, 1928, I found a nest of a Mistle-Thrush (*Turdus v. viscivorus*) in a horse-chestnut tree in co. Donegal containing four fresh eggs of a distinctive type. These I removed, and when passing the same tree with Mr. G. R. Humphreys on April 25th, I drew his attention to the nest. To our surprise, a Mistle-Thrush flew from the nest, which on examination contained four fresh eggs of the same type as the first laying. It is, I think, very unusual for the Mistle-Thrush to utilize the same nest twice in one season, though I have known of similar behaviour in the case of the Blackbird, Song-Thrush and Ring-Ouzel.

C. V. STONEY.

[In 1901 a nest close to my house at Clifton, Derbyshire, contained 5 eggs on April 29th. These hatched off safely, and on June 24th the nest was relined and contained 4 eggs. Two broods were also reared from a nest at Ashbourne in the same year.—F. C. R. JOURDAIN.]

LATE SAND-MARTINS IN NORFOLK.

AT Cromer on October 24th, 1928, I saw about ten Sand-Martins (*Riparia v. riparia*) flying to and fro in quite a normal fashion. It struck me as being rather unusual to see so many as ten on such a late date.

D. W. MUSSELWHITE.

TAWNY OWL FEEDING YOUNG ON KESTREL.

ON climbing up to the nesting-hole of a Tawny Owl (*Strix a. sylvatica*) on April 22nd, 1928, at Lavant, west Sussex, in order to ring the nestlings, I was surprised to find a newly-killed adult male Kestrel (*Falco t. tinnunculus*), on part of which the young had evidently been fed.

RAYMOND CARLYON-BRITTON.

DARK-BREASTED BARN-OWL IN MONMOUTHSHIRE.

THERE is a collection of mounted birds in the Newport Museum and Art Gallery, made by the late Mr. Percy Laybourne, a solicitor of this town. In this collection is a specimen of the Dark-breasted Barn-Owl (*Tyto alba guttata*) which is not recorded in the *Practical Handbook of British Birds*.

Mr. Laybourne told me the bird had been shot on the mountain side between Blaenavon and Abersychan, and was received by him in the flesh, and that he submitted it to the late Dr. Bowdler Sharpe, but whether in the flesh or not I am not quite sure.

To guard against any error in the identification, Messrs. Geoffrey C. S. Ingram and H. M. Salmon, of Cardiff, have examined the bird with me, and Mr. W. A. Gunn, the curator of the Museum, who has kindly given us every assistance. We have compared the bird with the description of *alba* and *guttata* in the *Handbook*, and are all agreed that it is *guttata*. The back of the bird is so dark that practically no trace of golden-buff is visible ; the breast and under-parts are of deep buff spotted all over with large, dark, almost black spots ; mesial streaks are present on flanks ; the facial disks are reddish-rust colour practically all over ; the tail and wing-feathers are very dark with strong bars.

Mr. Gunn found a small slip of paper in the case marked "Blaenavon 1908," and he gives me the permission of the Committee of the Museum to publish this notice. No sex was indicated on the label.

R. C. BANKS.

NOTES ON THE COMMON BUZZARD IN DEVON.

For the first time I am able to record this year (1928) a clutch of four eggs in the nest of a Buzzard (*Buteo b. buteo*) in Devon. Out of many nests examined in this and past years, in every case but one (when there were two eggs) the full clutch has been three eggs. All the eggs of the four clutch were entirely without colouring.

The unusual action of a Buzzard this spring is interesting in view of what the habits of this bird usually are. A family of five Ravens (*Corvus c. corax*), whose nest was within 200 yards of a sitting Buzzard, were driven into the Buzzard's wood ; the hen bird came off her nest at once and did not rest till every Raven, young and old, had been driven from her own plantation.

This same Buzzard had in her nest last year, besides her young, two adders, as well as mice and other food ; another adder, half killed, was found beneath another nest a mile away.

OWEN WYNNE.

[Clutches of four eggs occur regularly at one district on the coast of Devon and one instance of a five clutch is on record from the same locality.—F.C.R.J.]

CORMORANT DROWNED BY AN EEL.

On October 15th, 1928, I was informed by a young man that he had found on the previous day, on Filby Broad, Norfolk, a large bird floating dead with a live eel fastened round its neck. My informant had killed the eel by a cut at the back

of the neck. I went over at once to see the bird, which proved to be a Cormorant (*Phalacrocorax c. carbo*). It was hanging on a gate-post to dry and the eel was then still firmly fixed in the position shown in the photograph. It was evident that the Cormorant had struck the eel through the eye with its



upper mandible, the curved tip of which prevented its withdrawal. Knowing that an eel on being hooked can instantly tie itself round hook and line in two figure eights and remain so, it is easy to understand how it became tied round the neck of the Cormorant. Thus, neither could release itself, and the Cormorant, if not drowned before it reached the surface, must have been so shortly afterwards, as the weight

of the eel, which was over a pound, would have dragged its head down while its mouth was all the time wedged open. The constriction of the eel round the neck must also have been severe, as the mark was very visible when its stranglehold was relaxed some hours after death.

I have known of a somewhat similar case in which a Heron was strangled by an eel whose two eyes had been struck through by the mandible. A. H. PATTERSON.

FULMARS BREEDING IN NORTHUMBERLAND.

THIS summer (1928) I observed Fulmar Petrels (*Fulmarus g. glacialis*) nesting at five different places on the Northumberland coast and at one spot a few miles south of the border on the coast of Durham. The nests were most numerous at the most northern and most southern stations, and my observations were chiefly made at the former.



Cliffs on Northumberland coast, where, in 1928, 9 pair of Fulmar Petrels nested. The first egg, which was laid among stones, may be seen in the near right-hand corner.

The birds began to assemble on the cliff during May 6th and 7th, and the first egg was laid between 8.30 a.m. and 4.30 p.m. on the 25th and by the 29th five more birds had laid. No attempt at nest building was observed and all the eggs were laid upon open ledges, generally near the tops of the cliffs, which averaged about 60 feet above the sea; only five of the ledges were beneath overhanging rocks. Some of the eggs were laid on grassy ledges, some on sand, and a few among stones.

The eggs examined, being clear and fresh, were free from any smell; the strong scent of Fulmar eggs reported in several well-known works is probably imparted by the birds during incubation.

At the most northern place there were nine pairs, all of which laid, but in every case the eggs were taken within three weeks of their being laid. At the next spot there were two pairs which laid, but again the eggs very soon disappeared. At this station I several times observed from six to fourteen adult birds resting upon the sea near the cliffs. At the third locality, one pair incubated their single egg upwards of two weeks before the egg disappeared. This nesting place was in a stone quarry, more than a quarter of a mile inland, with several dwelling houses between it and the sea. At the fourth place there was one pair with an egg which was incubated for four weeks and then disappeared. At the most southern locality in Northumberland there was one pair which incubated the egg about ten days when the site of the nest was destroyed by a large portion of the cliff falling. Shortly before this there had been several very heavy rains.

At the Durham locality there were eight pairs— all of which laid, six hatching off. One chick, however, was missing in a few days, another a few days later, a third, which had been flapping its wings for a fortnight previously as if ready to fly, left between August 29th and 30th and the remaining three during the following four days.

Except for a few Jackdaws, Pigeons and Pipits, and in one instance a Kestrel, which nested quite close to a brooding Petrel, I observed no other birds nesting on any of the cliffs.

It may be mentioned that none of the Petrels appeared to lay again after the egg was taken. ISAAC CLARK.

PASSAGE WADERS ON DURHAM SEWAGE FARM.

DURING the months July, August and September of 1928, I observed the following waders on the Darlington sewage farm:—

RUFF (*Philomachus pugnax*).—One Ruff and two Reeves arrived on the sewage farm on September 11th and remained until September 15th. The Reeves were much buffier than the Ruff, which was very grey. It was impossible to see any colour on legs and bills, as these were covered with black mud. All three birds flapped vigorously (the Ruff most frequently as he was the heaviest) when they sank in the soft ooze. The Ruff and Reeves searched the mud, while the Curlew-Sandpipers waded deeply in the water.

KNOT (*Calidris c. canutus*).—A small party of Knots was seen on September 10th, but only for a short while.

CURLEW-SANDPIPER (*C. testacea*).—About a dozen Curlew-Sandpipers appeared on September 6th, and this number increased from day to day, until on September 11th it was raised to nearly thirty. The last Curlew-Sandpiper was seen on September 30th.

LITTLE STINT (*C. minuta*).—One seen with Dunlin on September 30th.

GREEN SANDPIPER (*Tringa ochropus*).—Regular autumn visitor. In 1927 birds were seen from the middle of August until November 1st.

GREENSHANK (*Tringa nebularia*).—Two Greenshank were seen on September 2nd, and one of these birds remained until September 12th.

Commoner waders seen were : Common Redshank (*Tringa totanus*), Dunlin (*Calidris alpina*), Ringed Plover (*Charadrius hiaticula*), Lapwing (*Vanellus vanellus*), Golden Plover (*Charadrius apricarius*), Common Sandpiper (*Tringa hypoleucos*) and Common Snipe (*Capella g. gallinago*).

W. E. ALMOND.

PASSAGE WADERS ON CHESHIRE SEWAGE-FARMS.

DURING August and September, 1928, the passage waders which visited the settling tanks of the Altrincham U.D.C. sewage-farm were not only more numerous than in most autumns but several unusual species were represented. Redshanks (*Tringa t. totanus*) were perhaps less plentiful than in many years ; the largest number was on August 28th. Snipe (*Capella g. gallinago*), on the other hand, were abundant in both months, numbering at least a hundred on August 8th. Lapwings (*Vanellus v. vanellus*) fluctuated as usual, sometimes being present in large flocks, and on September 26th fifty-three Golden Plovers (*Charadrius apricarius*) alighted on one of the half-flooded tanks. This species seldom comes to the tanks, although considerable flocks occasionally frequent neighbouring fields. Dunlins (*Calidris alpina*) and Ringed Plovers (*Charadrius hiaticula*) come every autumn, and their numbers varied from day to day. When Snipe were plentiful, on August 8th, about a score of Dunlins were feeding, but on other days there were seldom more than ten or a dozen, and on many days only two or three. Three to six Ringed Plovers was the usual number, except on September 11th when fourteen suddenly appeared, settled for a short rest and then passed on.

On August 24th all the birds that I could see, beyond Snipe, were a few Redshanks, six Dunlins and a single Ruff (*Philomachus pugnax*), but on my next visit, on the 28th, I found a remarkable increase. Redshanks now numbered between thirty and forty, Dunlins six, and there were two Ruffs, two Green Sandpipers (*Tringa ochropus*), two Greenshanks (*T. nebularia*), five Turnstones (*Arenaria i. interpres*), and two Kentish Plovers (*Ch. a. alexandrinus*) with eight Ringed Plovers. On the 29th several of the birds had gone on, but one of the Kentish Plovers, apparently an immature bird, remained until September 4th, and was seen by Mr. A. W. Boyd and Mr. A. G. Haworth. About five of the eight Ringed Plovers were immature birds with incomplete breast bands, and I frequently had the Kentish at close quarters alongside these young birds, so that it was easy to see the difference—smaller size, more sandy colouring, wholly black bills and very dark grey legs. When, however, Mr. Boyd saw the bird which remained at close range and examined it with a powerful telescope, magnifying to forty diameters, he discovered a character which I have not found mentioned in any book that I have consulted, namely, that the breast patches are much broader and less sharply defined than in mature birds; indeed, as he expressed it, there were faint indications of a breast band. We found, on examining the skins in the Dresser Collection, that in immature birds there are, sometimes at any rate, a few buff-tipped feathers beyond the patches, and even on the front of the breast. In 1923 I saw a single Kentish Plover on this same farm on September 6th and 7th (*antea*, Vol. XVIII., p. 26).

The Turnstone seldom visits either the local sewage-farms or the meres, and I have not before seen it on this farm; three of the five remained until September 2nd, and one was still there on the 4th. The birds levered up the mud as they do a pebble or weed and then washed their bills in the nearest pool.

On August 30th there was another change—fewer Redshanks, perhaps a dozen or so, ten Dunlins, three Ringed Plovers and one Kentish, two Common Sandpipers (*Tringa hypoleucos*), one Greenshank, one Ruff, three Turnstones, and one Curlew-Sandpiper (*Calidris testacea*). Curlew-Sandpipers steadily increased—two on September 2nd, twelve or fourteen on the 4th, thirty-three on the 9th, and between forty and fifty on the 11th. Mr. Boyd and I were at the farm at different times on the 12th, when I counted forty-nine and he made out fifty birds. The numbers were reduced on the

14th, and when Mr. C. Oldham accompanied me on the 18th there were still thirty-six birds on the tanks; after this the number diminished, and I saw the last, a single bird with Dunlins, on the 27th.

From September 4th to the 14th a Ruff and a Reeve were together; the Greenshank remained until at least September 11th, and Green Sandpipers were present, usually in couples, on six different dates—August 4th and 28th, and September 2nd, 6th, 11th and 30th. On this date, September 30th, a Little Stint (*Calidris minuta*) was feeding with three Dunlins, but I could not find it on October 2nd, though there were then six Dunlins. T. A. COWARD.

Although several of the waders which usually visit the Prestbury sewage-farm on autumn passage were in smaller numbers than in most years, Green Sandpipers were more numerous. Snipe were not very abundant, and Common Sandpipers, Redshanks, Ringed Plovers and Dunlin were present only in very small parties.

The returning Green Sandpipers, three birds, were first noticed on July 15th, and though the numbers observed varied slightly, they steadily rose, until both on August 4th and August 16th, I counted nine, and there may have been one or two more. On September 4th and 9th ten were counted, but on some fourteen other visits to the farm between August 21st and September 23rd, from five to seven was the usual number present. Two were on the farm on October 4th.

On September 22nd I saw two on a stream at some little distance from the farm. RONALD M. GARNETT.

WADERS AT BRENT RESERVOIR, MIDDLESEX.

ON September 2nd, 1928, at the Brent Reservoir, I saw a flock of eleven Greenshanks (*Tringa nebularia*). The water-level of the reservoir had been lowered considerably and large stretches of mud were exposed. I informed certain other members of the London Natural History Society of the presence of the birds, and the following day Mr. J. P. Hardiman visited the reservoir and saw nine Greenshanks. On September 12th I again visited the reservoir and saw a Sanderling (*Crocethia alba*) in winter plumage, two Curlew-Sandpipers (*Calidris testacea*) and a Greenshank. Mr. J. P. Hardiman on the 13th saw the Curlew-Sandpipers and Greenshank, but the Sanderling had moved on. On September 17th, when Mr. and Mrs. H. Boyd Watt visited the reservoir, the Curlew-Sandpipers and Greenshank were still present.

Dunlin and Ringed Plover were also present on each visit. The Curlew-Sandpipers were very tame, allowing approach to within ten yards or so. L. PARMENTER.

CURLEW-SANDPIPERS IN STAFFORDSHIRE.

ON September 16th, 1928, Mr. T. A. Coward and I watched three Curlew-Sandpipers (*Calidris testacea*) feeding on a patch of mud and sand at Gailey Pool.

The Curlew-Sandpiper has been recorded once previously in Staffordshire—in 1923—also on September 16th; I saw it then on another large reservoir in the south-west of the county (cf. *British Birds*, Vol. XVII., p. 142). A. W. BOYD.

GREY PHALAROPE IN BEDFORDSHIRE.

ON October 21st, 1928, I saw a Grey Phalarope (*Phalaropus fulicarius*) on an artificial lake in Bedford. There were about forty Mute Swans on the same piece of water. These drove the Phalarope away when it approached them. It had disappeared on the following day. H. W. FINLINSON.

SANDWICH TERNS IN PEMBROKESHIRE.

ON June 3rd, 1928, at 7 p.m., Mr. Charles Oldham and I saw a party of four Sandwich Terns (*Sterna sandvicensis*) at Newport, Pembrokeshire. Entering the bay—apparently from the open sea—they disported themselves for over an hour close inshore, diving frequently and resting at intervals on the sands by the tide-wash. On leaving, all flew slowly off, so far as we could judge, straight out to sea.

On June 4th we were away in the evening; but on June 5th, at the same time and place, we again watched a party of four which came, behaved and departed, in exactly the same manner as those we observed two days previously. Possibly they were the same birds; but in any case we saw no more of them during the four ensuing days.

Sandwich Terns appear to be very rare visitors to south-west Wales, and this, I believe, is the first record of the species in Pembrokeshire. BERTRAM LLOYD.

LITTLE GULLS IN YORKSHIRE AND SPOTTED REDSHANK IN DURHAM.

AN adult Little Gull (*Larus minutus*) was seen at Whitby, Yorkshire, on August 27th, 1928. It was just changing into winter plumage, and frequented the mouth of the harbour every day up to September 10th. An immature bird of this species was observed on October 25th on the Yorkshire side of the Tees estuary. This bird was flying steadily southwards.

On November 4th, 1928, we saw a Spotted Redshank (*Tringa erythropus*) on the Darlington sewage-farm. By its plumage it was a bird of the year. It was wading deeply, and, at times, swimming. When swimming it jerked its head like a Moorhen. It ducked nervously like a Common Redshank when approached and called loudly several times on the wing. The call was something like "tchu-it," several times repeated, with a short interval between each "tchu-it."

M. G. ROBINSON.

W. E. ALMOND.

WHITE STARLING IN SUSSEX.—Mr. R. Carlyon-Britton informs us that on July 30th, 1928, he watched a pure white Starling (*Sturnus v. vulgaris*) feeding with a flock of normal birds at Portobello, Sussex. He could not get close enough to see the colour of the irides. In September, 1928, another Starling with white striations on the rump was to be seen at Fishbourne, Sussex, for a week or so.

TREE-CREEPER'S NESTS IN BUILDINGS.—With reference to the note on this subject (*antea*, p. 138), Mr. J. A. Barnes informs us that six years ago he found a nest in Westmorland in an occupied house, behind a board which fitted closely against a roughcast wall just under the eaves. The house was quite a new one, with no ivy or climbing plants upon it. Records for sheds and outhouses are much more numerous.

Mr. N. Tracy informs us that in the spring of 1925 a Tree-Creeper built a nest behind some loose boards and posts in a small tool-shed near King's Lynn, Norfolk. As the door of the shed was generally kept locked, the bird used to gain entry through a small hole just above the door. This nest hatched off safely. In 1926, evidently the same pair built in the hut again, but this time on a shelf amongst some pea-guards about two feet above their last year's nest. This nest also hatched off safely. About six years ago he saw a Tree-Creeper's nest inside a boathouse on the Broads.

LITTLE OWL IN NORTHUMBERLAND.—Mr. M. Portal informs us that a Little Owl (*Athene n. vidalii*) was shot at Angerton, Morpeth, Northumberland, on Mr. F. Straker's estate, on October 10th, 1928. The bird has seldom been recorded from Northumberland.

SPOTTED CRAKES IN PEMBROKESHIRE.—Mr. H. A. Gilbert informs us that a wounded *Porzana porzana* was picked up by a dog on a wet bog near Solva on October 26th, 1928, while on the following day Mr. Gilbert saw at close range another Spotted Crake on a bog to the north of St. Davids.

BREEDING OF HONEY-BUZZARDS IN SOMERSET.

To the Editors of BRITISH BIRDS.

SIRS,—Will you kindly allow me space to make enquiries concerning the present whereabouts of a clutch of two eggs of the Honey-Buzzard taken in the Quantocks, Somerset, on June 25th, 1899. These eggs were sold at Stevens's on April 25th, 1906, ex collection of Mr. W. C. Wright. I should be very gratified if the possessor of the above eggs would kindly communicate with me direct, as the particulars are required for the history of the birds in the county.

HIGHFIELD HOUSE, CHEDDAR, SOMERSET.

STANLEY LEWIS.

"WING-CLAPPING."

To the Editors of BRITISH BIRDS.

SIRS,—I have read with interest Mr. Coward's article (*antea*, p. 134) on "wing-clapping."

I have no experience of the Nightjar or Short-eared Owl in this habit, but it is very familiar to me in the Wood-Pigeon. I have intently watched the "wing-clapping," perhaps hundreds of times, the bird often passing only 50 feet above my head. I have never seen the wings touch either above or below the body—in fact, my mind became quite definite on this point more than eighteen months ago. But I have failed to assign a cause for the noise made—is it possible that it is, in some way, connected with a peculiar air current or pocket being formed by the sudden upward, and yet forward, aerial jump, the wings so striking it as to cause the "crack" heard?

B. H. RYVES.

Nov. 3rd, 1928.

REVIEWS.

Report of the Oxford Ornithological Society on the Birds of Oxfordshire, Berkshire and Buckinghamshire, 1927. Edited by B. W. Tucker, M.A., M.B.O.U. 1s. 6d.

THIS Report bears evidence of increased activity and great keenness on the part of the members. We note that an intensive study on ecological lines has been commenced and is to be continued and we shall look forward with interest to the results of this much needed work. In conjunction with this, the co-operative ringing scheme, already described in these pages (Vol. XXI., pp. 290-4), has made a very useful beginning and, though details are not yet available, the whole scheme of investigations appears to be on lines which should produce valuable results.

The report on the birds of the three counties is full of good observation, well and critically edited. We may note that more observers are required, especially for S.W. Oxon., S.W. and E. Berks., and a considerable part of Bucks., and should any of our readers be able to help they should write to Mr. Tucker at the University Museum. Amongst the many notes appearing in this Report are the following:—

SISKIN (*Carduelis spinus*).—One would appear to have bred in an alder copse near Headington (Oxon.), but the evidence, though strong, is not quite conclusive.

GARDEN-WARBLER (*Sylvia borin*).—One was observed closely on Otmoor (Oxon.) on March 20th. The bird appeared to be injured and was in the same locality two hours after it was first seen. This is a remarkably early date.

BEE-EATER (*Merops apiaster*).—One was seen by Mr. A. H. Cocks in Buckinghamshire near Henley, in the last week of October.

ROLLER (*Coracias g. garrulus*).—One was shot at Eton (Berks.) on May 28th.

MANX SHEARWATER (*Puffinus p. puffinus*).—One taken alive on September 17th at Bradenham House appears to be the first record for Buckinghamshire.

There are a number of interesting notes on ducks and waders, and a good many observations on the Crossbill irruption additional to those which have already appeared in our pages.

Wildfowl and Waders, Nature and Sport in the Coastlands. Depicted by the late Frank Southgate, R.B.A., and described by Hugh B. C. Pollard. (Country Life.) £3 3s.

THIS is a large quarto volume containing sixteen plates in colour and forty-eight in monochrome, reproduced from drawings by the late Frank Southgate. The monochrome plates are to our mind by far the more successful, and many of them are delightful, and although some of the coloured plates make nice pictures, the birds have often a hard, yet unfinished, appearance. Many of the scenes depicted are on the Norfolk coast, and the book will appeal especially to those who are familiar with the sand-dunes and marshes in the neighbourhood of Wells. Many ornithologists are or have been keen wildfowlers, and they will enjoy Southgate's pictures and Mr. Pollard's pleasantly written pages. Mr. Pollard has also something to say about collectors, but, like so many popular writers, he does not distinguish between those who collect with the object of acquiring knowledge and those who collect merely to acquire the beautiful or rare.

The Geographical Distribution and Status of Birds in Scotland. By Evelyn V. Baxter and Leonora Jeffrey Rintoul. (Oliver & Boyd.) 15s. net.

THE plan of this work is quite original. To each species a whole page is devoted, a very brief general statement of its status being given at the top, while the rest of the page is devoted to a list of faunal areas, sub-divided into counties or parts of counties. The status of the bird is indicated in each sub-division by one or more initial letters signifying resident, summer visitor, winter visitor, passage migrant, occasional visitor, occasional in summer but has not been proved to breed, occasional winter visitor, occasional passage migrant. When necessary are added such notes as "used to breed," "has bred," "rare," "a few," etc., while to very rare visitors a reference to the record of its first appearance is given. If there is no record for a county the county itself is invariably inserted with a blank space. The book is thus very conveniently arranged for those who desire to know the status of any bird in Scotland, and its use should lead to a great increase of our knowledge on the subject, for there are a very large number of blanks, a good many of which could doubtless be filled in by more observation, and many others straight away from observations already made, but left unrecorded for want of such a guide as this. A map is provided, but this unfortunately is not sufficiently large or detailed to show exactly where the boundaries of the various areas fall. The nomenclature employed is like that of the *Practical Handbook*. At the end of the book a number of pages with the faunal divisions set out are provided for additional species. Corrections and additions and excluded species are to be found in appendices, and a sufficient index completes a very useful working book, both for those who live in Scotland and for those who visit that country.

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1929.

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AUTUMN HABITS OF ROOKS.

BY

THE REV. E. PEAKE.

THE aerial performances of Rooks (*Corvus f. frugilegus*) in autumn, as described by the Rev. E. U. Savage (*antea*, p. 57), have, I venture to suggest, a territorial significance. The visits of these birds to their nesting place or home are always attended by excitement and play. In September and October visits *during the day* are much more frequent than at other times in the non-breeding season and possibly this is owing to food being obtainable more or less near at hand after all the crops of grass or corn have been cleared off the fields. The more genial the atmospheric conditions, the greater is the excitement, the fun more furious. The wheeling and diving "stunts" take place chiefly about mid-day, with a clear, cloudless sky, and a fair, if not considerable, wind.

Except for a month or a month and a half after the nesting season is finished, say the end of May, Rooks scarcely ever fail to pay a *morning visit* to the Rookery. If the weather never varied it would be as regular as clockwork with a few minutes' difference each day, according to the sun. The visit is generally marked by chasings to and fro and clamour. Visits during the day are occasional, and visits in the evening unusual except as nesting time approaches in February and March, and in September or early October.

It is interesting to observe the direction from which Rooks arrive in the morning, or leave in the evening, so as to find out where their roosting-place is. Notes taken for seven years at Bluntisham, St. Ives, Huntingdonshire, seem to show that up to the beginning of October the Rectory Rooks go in a north-west direction, presumably to the woods near the famous Monks' Wood, Upwood or Wennington, but at that date they begin to go south, no doubt to Madingley, near Cambridge, a great roosting-place. On September 28th, 1927, I observed one band go south, another north. One or two notes seem to suggest that they possibly try at this time an intermediate place, Hemingford Park, which is due west, as they seem to make off in that direction. All the places named are about equidistant—from six to eight miles away, "as the Crow flies."

Can any evidence about migration be derived from this movement of Rooks by a comparison of observations? Is the cause "phototropic," or is it due to the thinning of the leaves in their favourite roost? I note in Beebe's *Log of*

the Sun, p. 217, it is stated that about October 15th the Crows begin to flock "back and forth to and from their winter roosts; the constancy of the mean date is remarkable." The exact species of Crow is not named, but is presumably *C. brachyrhynchos*.

There is no need to describe the various forms of the aerial display of the Rooks, the massed wheeling, sometimes in solemn silence, sometimes with clamour, the side-slipping, rolling and diving of individuals. The rending of the air in the sudden dives is bound to attract the attention, even of the casual. The other day a big phalanx of Rooks passed over my head with a roar of wings, then they suddenly turned, and, opening out, came soaring down the wind, bursting into loud clamour, with a Jackdaw *obligato*—for the Jackdaws join in these evolutions. There seems no evidence that mating has anything to do with these performances. You certainly see two playing together sometimes, but you may see one by himself. Rooks often seem to go about in pairs. Certainly when the trees are clear of leaves, you may see pairs attending to the old nests.

The middle of September is the most likely time to see the air manœuvres of the Rooks in their most extravagant and varied forms, but I have observed them as early as August 3rd and as late as December 3rd.

RECOVERY OF MARKED BIRDS.

No. Place and Date Ringed. Place and Date Recovered.

ROOK (*Corvus f. frugilegus*).

78936	Near Huddlesceugh Hall (Cumb.), 23.4.26, nest- ling, by R. H. Brown.	Newby, Penrith (Cumb.), 14.4.28, by A. Furness, per H. J. Moon.
24879	Near Gt. Budworth (Ches.), 30.6.26, bird of the year, by A. W. Boyd.	Near where ringed, 12.6.28, by Mr. Wright, per ringer.
24882	Ditto	ditto Holmrook, near Whitehaven (Cumb.), 4.4.28, by J. E. Borwick.

JACKDAW (*Colæus m. spermologus*).

66196	Rusland, Ulverston (Lancs.), 29.5.24, nestling, by C. F. Archibald.	Where ringed, 17.4.28, by ringer.
73750	Near Gt. Budworth (Ches.), 7.7.26, ad., by A. W. Boyd.	Near where ringed, 28.4.28, by G. Owen, per ringer.

STARLING (*Sturnus v. vulgaris*).

Z.1093	Broughty Ferry (Forfar.), 29.12.23, ad., by J. N. D. and T. L. Smith.	Dundee (Forfar.), 8.4.28, by A. Hynd.
X.3321	Ditto. 5.1.26, by T. L. Smith.	Where ringed, 26.5.28. by E. C. Stevens.
W.5839	Ditto 26.12.27.	Near where ringed, April, 1928, by I. M. Jamieson.
X.2287	Stanwix, Carlisle (Cumb.), 6.12.25, ad., by J. N. D. Smith.	Where ringed, 24.5.27; 27.11.27; 4.9.28, by ringer.
X.3248	Ditto 9.2.26.	Ditto, 4.12.27; 22.5.28, by ringer.
X.3278	Ditto immat., 4.9.26.	Ditto 27.11.27; 28.5.28.
X.3281	Ditto ad., 18.10.26.	Ditto 12.11.27; 30.5.28.
X.3282	Ditto 1.11.26.	Ditto 24.5.27; 3.12.27; 4.3.28.
X.3287	Ditto 19.1.27.	Ditto 5.6.28.
X.3290	Ditto 20.1.27.	Ditto 26.11.27; 27.5.28.
X.3296	Ditto ditto.	Wick (Caithness), Feb., 1928, by A. Cumming.
X.3788	Ditto 5.12.27.	Where ringed, 3.6.28, by ringer.
X.3790	Ditto 7.12.27.	Ditto ditto.
X.3804	Ditto 16.12.27.	Ditto 22.5.28.
X.3865	Ditto 21.12.27.	Near Newcastle-on-Tyne (Northumb.), 7.9.28, by J. Henderson.
58990	Torrance (Stirling.), 17.5.24, young, by J. Bartholo- mew.	Where ringed, April, 1928, by ringer.

No. Place and Date Ringed. Place and Date Recovered.

STARLING (*continued*).

W.8667	Great Ayton (Yorks.), 21.5.27, young, for G. P. Pollitt.	Redcar (Yorks.), 16.4.28, by F. W. Landymore.
B.1481	Ullswater (Westmorland), 6.6.24, young, by H. J. Moon.	Near where ringed, 7.5.28, by Mrs. Jackson, per ringer.
RR.2641	Ditto May, 1927.	Ditto, early October, 1928, by E. W. Fisher, per ringer.
X.1678	Near Gt. Budworth (Ches.), 5.12.25, ad., by A. W. Boyd.	Warrington (Lancs.), 3.5.28, by W. Cook.
X.1656	Ditto ditto.	Garlsdorf, Bleckede on the Elbe, Hanover, Germany, 14.7.28, by H. Schulte.
X.2611	Ditto 13.12.25.	Near where ringed, 5.6.28, by Mr. Harrison, per ringer. Nesting.
W.5268	Ditto, nestling, 17.5.27.	Ditto, 24.8.28, by ringer.
Z4555	Camelon (Stirling), 19.12.25, ad., by W. Brotherton.	Where ringed, 17.5.28, by J. Moir. Again released.
X.9616	Canterbury (Kent), 22.5.26, young, by St. Edmund's School N.H.S.	Herne Bay (Kent), April, 1928, by G. Fairbarns.
W.2653	Eton (Bucks.), 26.12.26, ad., by A. Mayall.	Where ringed, March, 1928, by C. M. B. Renshaw.
V.2802	Scone Estate (Perth.), 8.6.27, nestling, by Lord Scone.	On high ranges of Ben Chonzie (Perth.), 5.6.28 by R. R. Ross.
Y.3799	Near Chichester (Sussex), 18.2.27, ad., by R. Carlyon-Britton.	Where ringed, May, 1928, by J. Smithers. Nesting.
W.6079	Ditto juv., 7.8.27.	Ditto ditto. Nesting.
W.6099	Ditto ad., 1.1.28.	Near Danzig, Prussia, 23.7.28, by E. Hoffman.
Aberd. Univ. 38214	Salisbury (Wilts.), 30.12.27, ad., by M. W. Willson.	Deutsch Krone, W. Prussia, 18.8.28, by J. Dobbek, per J. Thienemann.

GREENFINCH (*Chloris ch. chloris*).

A.9332	Near Gt. Budworth (Ches.), 20.2.24, ad., by A. W. Boyd.	Where ringed, 27.2.24 ; 1.5.28, by ringer.
F.1132	Ditto 8.4.27.	Ditto 27.4.28.
D.6910	Near Dundee (Forfar.), 23.5.26, nestling, by Miss E. C. Sharp.	Near where ringed, 11.7.28. Again released.

CHAFFINCH (*Fringilla c. cælebs*).

B.3686	Near Gt. Budworth (Ches.), 12.11.24, ad., by A. W. Boyd.	Near where ringed, 30.5.28, by J. Bell, per ringer.
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No.	Place and Date Ringed.	Place and Date Recovered.
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CHAFFINCH (continued).

D.3301	Near Gt. Budworth (Ches.), 28.12.25. ad., by A. W. Boyd.	Where ringed, 15.6.26; March, June, July, 1927; 29.3.28, by ringer.
F.1123	Ditto 25.3.27.	Ditto 22.6.28.
D.4826	Stanwix, Carlisle (Cumb.), 14.12.25, ad., by J. N. D. Smith.	Where ringed, 11.7.27; 4.3.28.
D.3980	Scone Estate (Perth.), 22.5.26, nestling, by Lord Scone.	Near where ringed, 2.5.28, by Mrs. C. Menzies.

YELLOW-BUNTING (*Emberiza c. citrinella*).

B.9053	Near Gt. Budworth (Ches.), 12.2.25, ad., by A. W. Boyd.	Where ringed, 2.3.28, by ringer.
B.9118	Ditto	28.2.25. Ditto, 8.3.28; re-ringed F.9017.
D.3293	Ditto	16.12.25. Ditto, March, June, 1926; April, 1928.
D.5046	Ditto	28.2.26. Ditto 28.5.27; 4.4.28.
D.5060	Ditto	7.3.26. Ditto 22.2.28.
F.1167	Ditto	12.5.27. Ditto, May, June, 1928.
F.8967	Ditto	12.2.28. Near where ringed, 9.8.28, by G. Platt.

SKY-LARK (*Alauda a. arvensis*).

D.5059 Near Gt. Budworth (Ches.), Where ringed, three times
 6.3.26, ad., by A. W. June, 1928, by ringer.
 Boyd.

SPOTTED FLYCATCHER (*Muscicapa s. striata*).

G.3192 Bromyard (Worcs.), 24.6.28, Mas d'Argenais (Lot et
nestling, by P. E. A. Garonne), France, 5.9.28,
Morshead. by H. Girou.

PIED FLYCATCHER (*Muscicapa h. hypoleuca*).

D.7812 Hamsterley, Witton-le-Wear (Durham), 18.6.27, young, for G. P. Pollitt. Eggleston, near Darlington (Durham), 25.5.28, by G. East.

SONG-THRUSH (*Turdus ph. clarkei*).

Z.6378	Eton (Bucks.), 28.5.24,	Near where ringed, Aug.,
	nestling, by A. Mayall.	1927, by G. Webb.
V.1189	Ditto 15.5.27.	Ditto, Sept., 1928, ditto.
Z.3592	Malvern (Worcs.), 12.6.24,	Where ringed, 13.2.27 ;
	immat., by P. E. A.	10.5.28, by ringer.
	Morshead.	
Y.2464	Scone Estate (Perth.),	Near where ringed, 3.8.27, by
	30.4.25, nestling, by Lord	J. Campbell, per ringer.
	Scone.	

No. Place and Date Ringed. Place and Date Recovered.

SONG-THRUSH (*continued*).

Y.2013	Near Gt. Budworth (Ches.), 8.3.25, ad., by A. W. Boyd.	Where ringed, 10.2.27; 16.4.28, by ringer.
W.5417	Ditto 7.7.27.	Ditto, 9.3.28; twice May, 1928.
Y.2909	Ullswater (Westmorland), April, 1925, young, by H. J. Moon.	Near where ringed, 10.9.28, by F. Smith, per ringer.
76627	Ditto May, 1925.	Near Penruddock (Cumb.), 6.4.28, by J. Hayton. Ringed leg only found.
Y.5684	Nether Welton (Cumb.), 17.4.26, nestling, by R. H. Brown.	East Kilbride (Lanark.), 14.3.28, by Miss R. Ambler.
Z.2407	Seaford (Sussex), 27.5.26, nestling, by J. F. Thomas.	Wilmington (Sussex), 9.5.28, by I. W. Wilson.
X.6889.	Kirkmahoe (Dumfries.), 22.4.27, nestling, by W. and A. B. Duncan.	Drung (Cavan), Ireland, March, 1928, by M. Reehill.
X.3722	Carlisle (Cumb.), 11.5.27, ad., by J. M. D. Smith.	Where ringed, 22.4.28; 24.5.28, by ringer.
X.3767	Ditto 11.11.27.	Ditto 22.5.28; 3.6.28.
W.4653	Stockfield (Northumb.), 19.5.27, young, by Mrs. T. E. Hodgkin.	Newburn - on - Tyne (Nor- thumb.), 28.3.28, by W. Armstrong.
E.8037	Torrance (Stirling.), 13.5.27, young, by J. Bartholo- mew.	Where ringed, April, 1928, by ringer.
W.5058	Malvern (Worcs.), 23.6.27, nestling, by P. E. A. Morshead.	Ditto, 4.2.28, by H. E. Milliken.
V.8010	Wilmslow (Ches.), 5.8.27, ad., by E. Cohen.	Ditto, March, 1928, by Mrs. J. A. Hay.
V.8003	Ditto 6.8.27.	Ditto, 21.4.28, by ringer.

RING-OUZEL (*Turdus t. torquatus*)

Y.5230	Near Buxton (Derby.), 25.5.25, nestling, by A. W. Boyd.	Near where ringed, Aug., 1928, by A. H. Wain.
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BLACKBIRD (*Turdus m. merula*).

51300	Kilmacolm (Renfrew), 23.7.22, nestling, by Mr. and Mrs. R. O. Blyth.	Where ringed, 12.7.28, by J. H. Whitler.
Z.7451	Kirkmahoe (Dumfries.), 18.5.24, nestling, by Miss L. Duncan.	Ditto, 27.12.27, by ringer.
Y.7703	Ditto, immat., 11.8.26, by W. and A. B. Duncan.	Ditto 28.12.27.
Y.2303	Scone Estate (Perth.), 1.5.25, nestling, by Lord Scone.	Near where ringed, 23.3.28, by ringer.

No. Place and Date Ringed. Place and Date Recovered.

BLACKBIRD (*continued.*)

Y.6778	Scone Estate (Perth.), 7.5.25. nestling, by Lord Scone.	Ballymoney (Antrim), Ire- land, 3.3.28, by S. Scott.
Y.1182	Hareshawmuir, Kilmarnock, 8.5.26, young, by E. Richmond Paton.	Where ringed, 4.3.28, by ringer.
X.7536	Dalnaglar, Glenshee (Perth.), 19.5.26, nestling, by Miss E. C. Sharp.	Dunblane (Perth.), 27.3.28, by C. J. Lithgow.
V.5003	Balmuir, near Dundee, 23.5.28, ditto.	Aberdeen, late July, 1928, by J. Leiper.
Y.5710	Prestbury (Ches.), 22.8.26, ad., by R. M. Garnett.	Where ringed, 31.3.28, by ringer.
Y.5719	Ditto 7.11.26.	Ditto, 18.12.27, by ringer.
Y.3301	Broughty Ferry (Forfar.), 17.9.25, immat., by J. N. D. and T. L. Smith.	Near where ringed, 23.5.28, by Wm. Gordon.
W.5815	Ditto 18.12.27.	Ditto, early July, 1928, by P. Kerr.
X.3743	Carlisle (Cumb.), 26.5.27, ad., by J. N. D. Smith.	Where ringed, 12.3.28, by ringer.
X.3988	Ditto 12.3.28.	Preston Hall, Ford (Mid- lothian), 21.7.28, by C. Johnston.
Y.7047	Bridge of Earn (Perth.), 4.5.25, young, by A. H. R. Wilson.	Ditto, 19.7.28, by D. Ross.
W.3373	Penrith (Cumb.), June, 1926, young, by H. J. Moon.	Brampton, near Carlisle (Cumb.), early April, 1928, by T. G. Thompson.
W.6394	Ullswater (Cumb.), April, 1927, ditto.	Cumberland, June, 1928, by J. G. Robinson. Ringed leg (also 32 Pigeon rings) in Peregrine's cyrie.
W.9833	Helensburgh (Dumbarton), 27.4.27, nestling, by T. Kerr.	Where ringed, 16.5.28.
V.1121	Near Ramsey, Isle of Man, 7.5.27, by F. A. Craine.	Near where ringed, 6.7.28, by J. J. Gill.
Y.9048	Formby (Lancs.), 12.5.27, nestling, by T. L. S. Dooley.	Where ringed, early March, 1928, by L. Thomson.
W.9556	St. Ives (Hunts.), 30.5.27, young, by E. Peake.	Ditto, 11.3.28, by ringer.
V.8001	Wilmslow (Ches.), 4.8.27, ad., by E. Cohen.	Ditto, 11.3.28, by ringer.
V.7403	Prestwich (Lancs.), 5.8.27, ad., by G. Townsend.	Ditto, 23.4.28, by H. Bedford per R. M. Garnett.
W.5430 (57711)	Near Gt. Budworth (Ches.), 19.2.24, ad., by A. W. Boyd.	Ditto, twice Nov., 1925; three times, Dec., 1927, re-ringed W.5430; 18.9.28.

No.	Place and Date Ringed.	Place and Date Recovered.
REDBREAST (<i>Erithacus rubecula</i>).		
D.5598	Pyrford (Surrey), 2.5.26, nestling, by Mrs. L. E. Taylor.	Near where ringed, early August, 1928, by Mrs. E. Egan.
E.4229	Near Gt. Budworth (Ches.), 7.11.26, ad., by A. W. Boyd.	Where ringed, 11.3.28, by ringer.
E.9595	Ditto 20.1.27.	Ditto 7.5.28.
E.9535	Ditto 25.1.27.	Ditto 5.4.28.
E.4470	St. Ives (Hunts.), 3.3.27, ad., by E. Peake.	Ditto 17.12.27; 19.1.28.
D.8087	Kirkmahoe (Dumfries.), 9.5.27, nestling, by W. and A. B. Duncan.	Ditto Dec., 1927.
E.9514	Ullswater (Cumb.), June, 1927, young, by H. J. Moon.	Near where ringed, June 1928, by C. Alderson.
E.2062	Ullswater (Westmorland), ditto.	Ditto, 12.3.28, by ringer.
D.7793	Prestbury (Ches.), 23.1.27, ad., by R. M. Garnett.	Where ringed, twice Dec., 1927, by ringer.
E.2420	Ditto nestling, 24.6.27.	Ditto, 15.2.28.
E.2403	Ditto immat., 26.8.27.	Ditto, twice Dec., 1927; 4.2.28; 4.3.28.
E.2450	Ditto ad., 17.9.27	Ditto 21.12.27.
E.9540	Malvern (Worcs.), 16.12.27, ad., by P. E. A. Morshead.	Ditto, 10.5.28; again re- leased.
E.7877	Near Leeds (Yorks.), 9.2.27, ad., by K. W. Parkinson.	Near where ringed, 30.3.28.
E.7882	Ditto 13.2.27.	Ditto 23.3.28.
E.9311	Canterbury (Kent), 25.11.27, ad., by St. Edmund's School N.H.S.	Ditto, April 1928, by J. H. Kashler.

HEDGE-SPARROW (<i>Prunella modularis</i>).		
E.4201	Near Gt. Budworth (Ches.), 20.8.26, ad., by A. W. Boyd.	Where ringed, 1.5.28, by ringer.
D.9366	Scone Estate (Perth.), 30.4.27.	Ditto 4.3.28.
D.9008	Wilmslow (Ches.), 23.6.27, ad., by E. Cohen.	Ditto 7.3.28.
E.1600	Malvern (Worcs.), 6.10.27, ad., by P. E. A. Morshead.	Ditto 6.5.28.

WREN (<i>Troglodytes t. troglodytes</i>).		
G.3110	Malvern (Worcs.), 31.5.28, nestling, by P. E. A. Morshead.	Hawkley, Liss (Hants.), Oct., 1928, by L. S. Whicher.

SWALLOW (<i>Hirundo r. rustica</i>).		
ST.600	Great Budworth (Ches.), 18.6.27, nestling, by A. W. Boyd.	Near where ringed, 2.8.28 by Mrs. A. G. Boumphrey, per ringer.

No.	Place and Date Ringed.	Place and Date Recovered.
SWALLOW (<i>continued.</i>)		
SV.719	Laugharne (Carmarthen.), 16.8.27, breeding ad., by J. F. Thomas.	Where ringed, 14.8.28, by ringer. Feeding young in same shed.
SV.737.	Ditto ditto 23.8.27.	Ditto, 27.8.28, ditto.
MARTIN (<i>Delichon u. urbica</i>).		
C.6106	Nether Alderley (Ches.), 3.8.25, ad., by R. M. Garnett.	Near where ringed, Sept., 1927, by ringer.
E.6026	Burford (Oxford.), 10.7.26, ad., by A. Mayall.	Where ringed, early June, 1928, by Miss E. M. Walter.
SWIFT (<i>Apus a. apus</i>).		
W.7814	Shenfield (Essex), 26.6.27, ad., by R. E. J. Edwards for G. P. Pollitt.	Where ringed, 14.5.28, by ringer. Caught on nest.
KINGFISHER (<i>Alcedo a. ispida</i>).		
F.4654	Near Wokingham (Berks.), 2.7.27, nestling, by J. N. Fletcher.	Barking Marsh, Dagenham (Essex), 1.8.28, by H. Chipperfield.
WRYNECK (<i>Jynx t. torquilla</i>).		
B.9289	Eton (Bucks.), 21.6.26, young, by J. H. Methold.	Near Maidenhead (Berks.), mid-June, 1928, by Mrs. Hendry.
LITTLE OWL (<i>Athene n. vidalii</i>).		
RR.1101	Near Swanage (Dorset.), 5.5.27, ad., by P. T. Cotton for Wellington College.	Garnstone Estate Park, Weobley (Hereford.), 3.6.28, by T. W. Brown.
RR.2346	Near Farnham, Bishop's Stortford (Herts.), 28.5.27, nestling, by C. S. Clarke for Lon. Nat. Hist. Soc.	Elsenham (Essex), June, 1928, by V. Routledge.
79785	Holywell, Swanmore (Hants.), 12.6.27, young, by M. Portal.	Southwick, Fareham (Hants.), late June, 1928, by F. Wesley, per G. H. Morgan.
TAWNY OWL (<i>Strix a. sylvatica</i>).		
77604	Logiealmond Lodge (Perth.), 1.5.26, nestling, for Lord Scone.	Near Perth, 15.5.28, by J. D. Macdonald.
39456	Torrance (Stirling.), 3.5.27, young, by J. Bartholo- mew.	Milton-by-Campsie (Stirling.), 25.6.28, by T. Adamson.
BARN-OWL (<i>Tyto a. alba</i>).		
102646	Burscough (Lancs.), July, 1926, young, by H. J. Moon.	Near Kirkby (Lancs.), 7.3.28, by R. Tyrer.

No. Place and Date Ringed. Place and Date Recovered.

MERLIN (*Falco c. aesalon*).

- V.6733 East Cheshire hills, 30.6.28, Riddings (Derbyshire),
nestling, by R. E. 19.9.28, by J. J. Lathwell.
Knowles.

KESTREL (*Falco t. tinnunculus*).

- 77495 Haslingfield (Cambs.), Kettering (Northants.), mid-
13.6.25, young, by G. W. April, 1928, by J. M. Flack.
Thompson.

MONTAGU'S HARRIER (*Circus pygargus*).

- 28804 Norfolk, 29.6.27, young. Near Northampton, mid-May,
1928 (found dead), by
H. E. C. Fursier.

SPARROW-HAWK (*Accipiter n. nisus*).

- 78090 Curthwaite (Cumb.), 16.7.25, Near Brampton, Carlisle
nestling, by R. H. Brown. (Cumb.), 24.4.28, by Thos.
Hall.
RR.2064 Holt (Norfolk), 23.6.27, Houghton, King's Lynn (Nor-
young, by A. P. Meikle- folk), 4.4.28, by A. D.
john. Wilson.
RR.2067 Ditto ditto. Mannington (Norfolk), 2.6.28,
by D. Barlow.

HERON (*Ardea c. cinerea*).

- 105741 Alder Shaw Wood, near Near Mettet (Namur), Bel-
Beckley (Sussex), 22.4.28, gium, 27.6.28, by A. van
nestling, by D. D. God- Delft.
frey.
105719 Ditto ditto. Beermem-lez-Bruges, Bel-
gium, early June, 1928,
by J. Dedecker.
105747 Ditto ditto. Beauvoir-en-Foréz, Boen
(Loire), France, 10.7.28, by
Comte de Neufborg and
A. Chappellier.
105751 Ditto ditto. Near mouth of Seine, France
15.8.28, by P. Binet.
105750 Ditto ditto. Goyan (Pontevedra), Spain,
4.12.28, by S. Rodriguez.
105213 Fawley Court, near Henley River Blythe, Ridware
(Bucks.), 1.4.28, young, (Staffs.), early June, 1928,
for G. P. Pollitt. by C. W. Howitt.
104765 Sandy (Beds.), 28.4.28, St. Neots (Hunts.), 10.10.28,
young, ditto. by J. Rampley.
103299 Lynedoch, Almondbank Brechin (Forfar.), mid-July,
(Perth.), June, 1928, 1928, by W. P. Clark.
by Lord Scone.
106850 Brockley Combe, Cleve Wrrington (Som.), 28.7.28, by
(Som.), 20.6.28, young, M. C. G. Bentall.
by K. C. Berry for
Bristol Naturalists' Soc.

No.	Place and Date Ringed.	Place and Date Recovered.
MALLARD (<i>Anas p. platyrhyncha</i>).		
27028	Otmoor (Oxford), 22.5.27, flapper, by E. M. Nicholson.	Near Charlton-on-Otmoor (Oxford.), January, 1928, by H. L. Newell, Jnr., per B. W. Tucker.
24209	Prestbury (Ches.), 29.5.27, hand - reared from Cheshire egg, by R. M. Garnett.	Where ringed, 15.1.28, by ringer.
27506	Lynedoch, Almondbank (Perth.), 25.6.27, juv., by H. Zimmerman for Lord Scone.	Near where ringed, early November, 1927, by ringer.
31 birds	Oakmere (Ches.), 13.9.26 and 27.7.27, hand-reared young, by A. W. Boyd.	Where ringed, between September, 1927, and February, 1928.

GANNET (*Sula bassana*).

101034	Bass Rock, Scotland, Aug., 1926, young, by H. W. Robinson.	Near Waag, Faroe Islands, 5.6.28, by P. E. Larsen.
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TEAL (*Anas c. crecca*).

76166	Longtown (Cumb.), 3.3.25, ad., by R. J. Graham.	R. Wear, between Sunderland and Durham, 21.1.28, by T. Harrison.
78407	Ditto 23.12.25.	Nordstrand (Kreis-Husum), Schleswig-Holstein, 17.9.27, by H. Boysen.
78349	Ditto 28.10.25.	Norrbotten (within Lapland frontier), Sweden, 22.6.27, by K. Stenberg.
78452	Ditto 26.1.26.	Parish of Älfdalen (Dalecarlia), Sweden, 14.5.28, by D. E. Eriksson, per E. Lonnberg.
RR.5123	Stranraer (Wigtown.), 28.2.28, ad., by M. Portal.	Tempo (Fermanagh), Ireland, early Aug., 1928, by J. R. Watson.

CORMORANT (*Phalacrocorax c. carbo*).

10066(?)*	Farne Islands (Northumb.), 2.8.13, nestling, by Mrs. A. Gordon.	Pease Bay (Northumb.), Dec., 1927, by P. M. Levy.
104392	Badcall Islands (Sutherland.), 5.7.28, nestling, by Miss E. C. Sharp.	Lappoch Beacon, near Irvine Bar (Ayr.), 29.9.28, by A. G. Dodson.

* The sixth figure is worn off, but numbers 100660 to 100669 were all put on Cormorants at the same place and date.

No. Place and Date Ringed. Place and Date Recovered.

SHAG (*Phalacrocorax a. aristotelis*).

100875	Lunga, Treshnish Isles (Argyll.), 13.7.27, nestling, by W. and A. B. Duncan.	Ulva Ferry, Mull (Argyll.), 7.4.28, by N. Macfarlane.
101446	Ditto 7.6.27.	Isle of Fiary, S. Uist (O. Hebrides), mid-May, 1928, by J. McKinnon.
102115	Ditto 12.7.27.	Island of Ensay, Sound of Harris (O. Hebrides), early Feb., 1928, by C. Morrison per D. A. Stewart.
101143	Ditto ditto.	Loch Nevis, Mallaig (Inverness.), Feb., 1928, by D. Macdonald.
104176	Tintagel (Cornwall), 25.7.27, nestling, by Miss J. M. and P. K. Chance.	Ile de Sein, France, 11.2.28, by the Acting British Consul.

WOOD-PIGEON (*Columba p. palumbus*).

79725	Kinloch, Meigle (Perth.), 25.5.26, young, by C. W. Walker.	Where ringed, 28.2.28, by ringer.
79391	Ditto 2.5.26.	Near where ringed, mid-March, 1928, by J. M. Carmichael and J. Bartholomew.
77607	Scone Estate (Perth.), 31.3.27, nestling, by Lord Scone.	Ditto, 29.3.28, by R. Mitchell.
74426	Whitehall, Kirkmahoe, (Dumfries.), 19.4.27, nestling, by W. and A. B. Duncan.	Auldgirth (Dumfries.), 11.7.28, by J. Mitchell.
79819	Torrance (Stirling.), 9.5.27, young, by J. Bartholomew.	Near Dundee (Forfar.), 21.3.28, by R. T. Stewart.
RR.1428	Harbledown (Kent), 5.6.27, young, for St. Edmund's School Nat. Hist. Soc.	Near Faversham (Kent), 27.7.28, by A. Hockley.

TURTLE-DOVE (*Streptopelia t. turtur*).

RR.4409 (73773) (72945)	Near Gt. Budworth (Ches.), 19.8.24, ad., by A. W. Boyd.	Where ringed, 8.7.25; 9.6.26; 15.6.27 (re-ringed 73773); 6.5.28 (re-ringed RR.4409); 17.6.28, by ringer.
RR.4405 (73740) (73708)	Ditto 8.7.25.	Where ringed, 26.6.26 (re-ringed 73740); 2.8.26; June, twice July, 1927 (re-ringed RR.4405); July, Aug. 1928.
73735	Ditto 21.6.26.	Ditto, 4.7.28; re-ringed RR.4429.

No.	Place and Date Ringed.	Place and Date Recovered.
TURTLE-DOVE (<i>continued.</i>)		
73745	Near Gt. Budworth (Ches.), 30.6.26, ad., by A.W. Boyd.	Near where ringed, 19.5.28, by L. E. Reed, per ringer.
73782	Ditto 27.7.26.	Where ringed, 23.7.28; re- ringed RR.4435.

LAPWING (*Vanellus vanellus*).

88132	Torrance (Stirling.), 11.6.17, nestling, by J. Bartholomew.	Where ringed, 25.6.28, by ringer.
Y.7715	Ditto 15.6.25.	Ditto, 19.6.28. Dead some time.
X.7337	Ditto, young, 1.7.26.	Abbeyfeale (Limerick), Ire- land, 20.1.28, by J. F. Hanly.
Z.5450	Thornhill (Dumfries.), 9.6.24, nestling, by J. Murray, for H. S. Gladstone.	Where ringed, late July, 1928. Ring found by remains of bird.
Y.8415	Bowscale Moss (Cumb.), 17.5.26, young, by Miss L. W. Streatfield.	Ditto, 1.3.28, by T. Cockbain.
78045	Killearn (Stirling.), 8.6.26, by P. C. Macfarlane.	Near where ringed, July, 1928, by A. McEwen.
X.3492	Near Kirriemuir (Forfar.), 7.6.26, young, by T. L. Smith.	Errol (Perth.), 29.3.28, by J. Scott and A. Graham.
W.7920	Tiree (Argyll.), 28.4.27, young, by L. Fraser for G. P. Pollitt.	Barnstaple (Devon.), 12.3.28, by F. H. Newton.
V.3044	Penrith (Cumb.), May, 1927, young, by H. J. Moon.	Little Downham, Ely (Cambs.), March, 1928, by P. Dean.
W.3805	Gartmore (Perth.), 21.6.27, by Sir S. Bilsland.	Etcharry, Canton de Saint Palais (Basses Pyrénées), France, 5.1.28, by Mons. Urrutybéhéty.
RR.4668	Aviemore (Inverness.), 10.5.28, nestling, by P. K. Chance.	Between Dundee and Perth, 13.10.28, by D. McInroy.

REDSHANK (*Tringa t. totanus*).

X.8766	Ainsdale (Lancs.), 26.5.26, nestling, by R. Wagstaffe for F. W. Holder.	Arcachon (Gironde), France, June, 1928, by J. Berlioz. Date not confirmed.
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CURLEW (*Numenius a. arquata*).

22352	Ullswater (Cumb.), May, 1925, young, by H. J. Moon.	Claremorris (Mayo), Ireland, 2.10.28, by P. J. Hoban.
25757	Penrith (Cumb.), June, 1928, ditto.	Ballina (Mayo), Ireland, mid- Oct., 1928, by R. R. Bennerhassett.
RR.1866	Near Skirwith (Cumb.), 20.5.28, nestling, by R. H. Brown.	Near Sline Head Lighthouse (Galway), Ireland, 2.9.28, by T. Connolly.

No. Place and Date Ringed. Place and Date Recovered.

SNIPPE (*Capella g. gallinago*).

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| W.1202 | Logiealmond Lodge(Perth.),
12.5.27, juv., by J. Gow
for Lord Scone. | Dunkeld (Perth.), 28.4.28, by
J. Fotheringham. |
| W.7463 | Loch Leven (Kinross),
11.5.27, juv., by Lord
Scone. | Near where ringed, 13.8.28,
by ringer. |
| W.9670 | Glen Fruin (Dumbarton.),
3.6.27, young, by T.
Kerr. | Near Balloch (Dumbarton.),
13.8.28, by H. N. C.
Campbell. |
| V.5147 | Brough (Westmorland),
June, 1927, young, by
H. J. Moon. | Dalbeattie (Kirkcudbright.),
14.8.28, by R. F. Hanbury. |

WOODCOCK (*Scolopax r. rusticola*).

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| Z.3504 | Dunsop Bridge (Lancs.),
27.5.24, young, by A. C.
Stephenson, for B. J.
Ringrose. | Near Clitheroe (Yorks.), Feb.,
1928, by E. Cowking. |
| U.1562 | Margam Castle, Port Talbot
(Glam.), 24.4.28, for
Lord Scone. | Between Hilton and Appleby
(Westmorland), 9.10.28, by
C. H. Shaw. |
| V.9995 | Keir, Dunblane (Perth.),
12.6.28, nestling, ditto. | Near Doune (Perth.), Oct.,
1928, by Miss A. E. Foster. |

SANDWICH TERN (*Sterna s. sandvicensis*).

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| T.3699 | Blakeney Point (Norfolk),
30.6.28, young, by A. W.
Boyd. | North Sands, East Hartlepool
(Durham), 2.9.28, by C.
Bantoft. |
| T.3783 | Ditto ditto. | Eggie, 7 miles N. of Aberdeen,
27.8.28, by R. C. Crombie. |
| T.3936 | Ditto 1.7.28. | Alnmouth (Northumb.),
24.8.28, by J. J. S. Walker. |

BLACK-HEADED GULL (*Larus r. ridibundus*).

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| 75666 | Scolt Head (Norfolk),
12.6.25, young, by Mrs.
T. E. Hodgkin. | Where ringed, early June,
1928, by Mr. Chestney, per
S. H. Long. |
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HERRING-GULL (*Larus a. argentatus*).

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| 28949 | Lunga Mhor, off Arisaig
(Inverness.), 24.6.27,
nestling, by W. and A. B.
Duncan. | Near Dalbeattie (Kircud-
bright.), 10.5.28, by J.
Houston. |
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MOOR-HEN (*Gallinula ch. chloropus*).

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| 76379 | Holt (Norfolk), 21.6.25,
young, by R. G. Willan. | Near where ringed, 20.7.28,
by R. Deterding. |
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NOTES

GOLDFINCH DECORATING NEST.

ON May 4th, 1928, I watched a Goldfinch (*Carduelis c. britannica*) snapping off the stalks, about two inches from the head, of some "Forget-me-nots" (*Myosotis*) in our garden in west Sussex. The bird, which was accompanied by a second bird, soon flew off with three or four flowers in its bill, presumably to be added to its nest. W. D. SHAW.

ON May 5th, 1928, I found a nest of Goldfinch in my garden at Sidlesham, west Sussex, completely lined with the flowering heads of "Forget-me-not," the outside being composed of silver lichens—a beautiful work of art. A few days later the normal white wool lining had been added and the eggs were then laid. H. T. GOSNELL.

COMMON CROSSBILLS BREEDING IN DEVON.

SOME years ago a friend of mine, Mr. A. B. Gay, told me that a pair of Crossbills (*Loxia c. curvirostra*) had been breeding in his garden in Lapford parish in north Devon, and as D'Urban and Mathew give but one instance of this bird nesting in their *Birds of Devon*, the record of this fresh nest might be interesting.

Mr. Gay writes as follows: "I saw the birds first about April 10th (1923) and found the nest on April 25th. It was then practically finished and was built on top of a horizontal branch of a big fir in my boundary fence. It was about 18 feet from the ground and 8 or 10 feet from the main trunk; very like a Greenfinch's nest, but seemed to me more loosely built. It was well hidden from below by other branches. The first egg was laid on May 1st and on May 6th the hen was sitting on four eggs. The young birds left the nest on June 8th and went away within a few days. The old birds appeared to be much greyer in colour than most of those I have seen—the hen especially so." OWEN WYNNE.

SOME BREEDING-HABITS OF THE PIED FLYCATCHER.

THE behaviour of the male Pied Flycatcher (*Muscicapa h. hypoleuca*) on its first arrival is remarkable. Though gentle and weak in appearance it is one of the most pugnacious birds. Mr. O. R. Owen (*in litt.*) has told me how he has known Great Tits and Nuthatches robbed of their nesting sites by this apparently weak little bird.

The male Pied Flycatcher, within a very few hours of its first arrival, finds or usurps a suitable nesting site, and is extremely jealous of any near approach to its chosen place by its own species or by any other birds which nest in holes. In 1927 a male arrived in my garden, which is outside the regular breeding haunt of the species, and took possession of a nesting box. This bird sang continuously for most of the day, scuffled with Tits and other likely rivals for its home, and locked into the box or perched on it at frequent intervals. It found no mate, however, and after waiting three weeks, until well on into June, it disappeared (exactly as the male Nightingale does in the same district and for the same reason).

On May 15th, 1927, I and two other observers tried to find a Pied Flycatcher's nest on the banks of the Wye below Builth. In the course of four hours continuous observation the female was never seen and the male showed interest in one hole only. That hole contained no sign of a nest, and we were puzzled.

However, I returned on May 21st with my wife; when we had been watching for over an hour a hen Pied Flycatcher arrived on the scene. The cock instantly became excited, and after shaking his wings, and emitting very shrill mouse-like squeaks, flew to his chosen nest-hole. The hen took no notice of this invitation at first and indeed when the cock flew towards her, she attacked him violently and viciously. However, she was ultimately pacified, and after many more flutterings and squeakings by the male, was persuaded to visit the nesting-hole. She first dived into the hole and out again, and then, standing statuesque and upright for a long time at the mouth of the hole, inspected the site from outside. Evidently satisfied at last she dived into the hole and crept out again at frequent intervals for a long time—in fact, until we departed. During this time the cock began to sing, but readily relapsed into his former shrill note whenever he came near the hen.

A month later this hole contained a young brood—and presumably we had seen the first arrival of the hen bird.

The descriptions of the arrival of various female Warblers by Mr. Elliot Howard became of greater interest to us even than before after having viewed this little scene.

H. A. GILBERT.

RED-BREASTED FLYCATCHER IN NORTHUMBERLAND.

WHEN I was walking with my gun along the shore near Boulmer, Northumberland, on October 1st, 1928, my attention

was attracted by a small bird, which was unknown to me, in company with two Rock-Pipits (*Anthus s. petrosus*). It was very restless and kept continually jerking its tail up and down after the manner of a Stonechat. As I could by no means determine what it was I shot it. When I got home I looked it up in Coward's *The Birds of the British Isles and their Eggs*, and eventually came to the conclusion that it was a Red-breasted Flycatcher (*Muscicapa p. parva*) in immature plumage. To make certain, however, I sent it to the Curator of the Hancock Museum, Newcastle-on-Tyne, who kindly identified it for me.

W. S. CRASTER.

PEREGRINE FALCON NESTING ON THE GROUND IN HAMPSHIRE.

WITH the exception of the statement in *The British Bird Book* (Kirkman), repeated in the *Practical Handbook of Birds* (Witherby), that "The species has been found nesting among heather on a low-lying islet" there appears to be nothing recorded of the Peregrine Falcon (*Falco p. peregrinus*) nesting on the ground in this country.

In early May of this year (1928) I investigated a case of this kind and obtained clear and convincing proof of the genuineness of the case, and have no hesitancy in putting it on record.

The lad who found the nest showed me the eggs unblown—undoubtedly Peregrine's—and conducted me to the nest, a shallow depression in the short scrubby heather at the base of a stump of a small Scots pine, standing on a dry part of a flat, boggy and unfrequented heath common in west Hampshire. This common, and similar open wastes in Dorset, are favourite hunting grounds of the Peregrine.

W. J. ASHFORD.

FROM two independent sources I have received confirmatory evidence of the breeding of the Peregrine Falcon on the ground in west Hampshire, recorded by Mr. Ashford above.

In the case referred to by me in *The British Bird Book* and the *Practical Handbook*, a Peregrine was flushed from eggs among deep heather on an islet off the Welsh coast, where there were no cliffs and the eyrie was only about 50 ft. above sea-level. This is scarcely a parallel case, however, as the isolation of the site provided some protection.

Newton, in the *Ootheca Wolleyana*, records some half dozen sets taken from hillocks in marshes in Enontekis Lappmark and East Bothnia, and more recently other cases of breeding on

the ground have been recorded from Finland in the pages of *Ornis Fennica*, IV. (1927), p. 120.

It is remarkable that though the Peregrine frequently breeds in open nests in trees on the Continent, there is, as yet, no positive record of this habit from the British Isles, and with the exception of the Welsh record mentioned above, this is the first case of breeding on the ground within our limits. If any proof were needed that the keeper's gun is the determining factor in the status of this species, and not the collector, it may be found in the adoption of every available site in districts where there is little game preservation and persistent, but unavailing, efforts to establish itself on the grouse moors, even in counties in the middle of England where for centuries it has been unknown as a breeding species.

F. C. R. JOURDAIN.

SHELD-DUCK BREEDING IN TREE IN SUFFOLK.

ON May 24th, 1926, I noticed a hole in an oak tree on the banks of the Orwell in Woolverstone Park, at about 30 feet from the ground, which had been formed where a branch had been broken off. The hole was about three feet in depth and in this cavity was a nest of a Sheld-duck (*Tadorna tadorna*) with four eggs. The country round is full of rabbit holes, and it is evident that many of them are occupied by the Sheld-ducks, since I have seen as many as 40 birds within about 1½ miles in this district.

On April 13th, 1927, in the same clump of trees, I noticed a Sheld-duck fly up to a hole in an oak, but on approaching I found that the bird was unable to extricate itself, and with some difficulty I managed to free it. When released, it flew down the river where it was joined by another bird.

J. UTTEH TODD.

LONG-TAILED DUCK IN THE ISLE OF MAN.

FROM November 1st to 11th, 1928, a Long-tailed Duck (*Clangula hyemalis*), a female or immature bird, was seen in Derby Haven, Isle of Man, by Col. H. W. Madoc and myself. It usually fed in very shallow water, diving frequently within a foot or two of the beach, and on one occasion climbed out on to some weed-covered rocks, where it rested.

The Long-tailed Duck has not, I understand, been noted previously in the Isle of Man.

A. W. BOYD.

LONG-TAILED DUCK IN SURREY.

ON November 13th, 1928, while passing one of the reservoirs that are strung out along the Surrey bank of the Thames near

Hammersmith bridge, I stopped to watch a party of Tufted Duck diving for mussels. Among them I noticed a lighter-coloured bird of about the same size, also diving persistently, with very short pauses at the surface. On looking through my glass I found that it was a Long-tailed Duck (*Clangula hyemalis*) without any long tail-feathers; more than that I cannot say. We are told that most specimens of this Duck obtained inland have proved to be immature males; this one may have been no exception to the rule, though I should have been quite ready to accept it as a female.

I have watched other Long-tailed Ducks while they were diving, but had not previously noticed, as with this individual, the extreme shortness of the intervals between the dives. It was not submerged for very long, not longer probably than the Tufted Ducks in company with it, but the pauses on the surface were so short that often there was not time to get the bird into the field of one's glass before it disappeared again. Four seconds, three seconds, sometimes even less than that, seemed long enough for it to "get its breath." On December 7th it was still there.

I am told that this duck has never been recorded as occurring in the county of Surrey. DONALD GUNN.

EARLY RUFFS AT OXFORD.

THREE Ruffs (*Philomachus pugnax*) were present on Port Meadow at Oxford from March 8th to 14th, 1928. They were seen repeatedly between these dates, generally associating with Lapwing, by D.M.C. and P.J.C., and on the 10th also by B.W.T. All three were yellow-legged birds, probably two Ruffs and a Reeve, judging from the sizes. The former, when viewed with a telescope, showed indications of darker feathers in the region of the upper-breast, which were probably the beginnings of the ruff. It is difficult to say whether these were passage migrants in the sense in which the term is commonly used—*i.e.*, migrating birds coming from abroad—or whether they were individuals which had wintered near at hand. Certainly they had not previously been on Port Meadow, and as it is not usual to find more than an occasional odd bird wintering in this country, it seems probable that they were early arrivals from the south. The occurrence is of interest, as the date is a month earlier than the normal beginning of the spring passage, which the *Practical Handbook*

P. J. CAMPBELL.

D. M. CAMPBELL.

B. W. TUCKER.

PROBABLE POMATORHINE SKUA IN
HERTFORDSHIRE.

IN the forenoon of November 22nd, 1928, when I was walking with Mr. T. A. Coward on the road near Little Tring, a Skua passed over the reservoirs at a considerable height, bearing steadily south-west on a line parallel with the Chiltern escarpment, a course one so often sees taken by migrating Gulls and Terns in autumn. The bird, an adult with white under-parts, looked more bulky than an Arctic Skua, and when it passed some Rooks we had a standard of comparison that showed it to be distinctly larger. A difference in the shape of its tail was apparent too, but this difference is not easy to describe. The date and the appearance of the bird left no reasonable room for doubt that it was a Pomatorhine Skua (*Stercorarius pomarinus*).

CHAS. OLDHAM.

LITTLE AUK IN MIDDLESEX.

ON November 28th, 1928, when at the reservoir near Staines, I saw a Little Auk (*Alle alle*) which was so complaisant as to allow me to watch it for an hour at ever decreasing range till I was within a dozen yards of it. Except for the abnormal tameness, the bird showed no evidence of being ill. It preened and flapped its wings at times and had one short spell of fishing which ended with the capture of a small fish, brought to the surface to be swallowed. Its main concern appeared to be to keep head to wind in a sheltered corner; in me it showed no interest whatever. During the following week I saw it several times and could detect no difference in its behaviour, but on the night of December 6th it died, out of the water.

Little Auks have often been seen in Middlesex (though not mentioned in Harting's *Birds of Middlesex*), but I suppose most of them have been obviously starving birds driven inland by a gale. At any rate, it must be an unusual experience within the county to see one swimming quietly in fresh water for a whole week.

DONALD GUNN.

LITTLE AUKS ON NORFOLK COAST.

ON November 26th, 1928, I saw several small flocks of Little Auks (*Alle alle*) flying close in-shore at Hemsby, Norfolk. In all I counted fifty-two birds, all of which were flying from south to north.

J. M. FERRIER.

RED-BACKED SHRIKE IN CARNARVONSHIRE.—Mr. Richard Jones informs us that he saw a Red-backed Shrike (*Lanius*

collurio) on June 17th, 1928, in his garden at Gannock Park, Deganwy. The bird, however, stayed only a very short time and left in a southerly direction.

MISTLE-THRUSH LAYING TWICE IN SAME NEST.—With reference to the note on this subject (*antea*, p. 161), Mr. A. W. Boyd informs us that a Mistle-Thrush (*Turdus v. viscivorus*) built a nest in his orchard in Cheshire on March 26th, 1928, but its eggs were destroyed by a Magpie. The bird built again in another pear tree and in this nest had two broods of two and three young, which Mr. Boyd ringed on June 6th and July 19th respectively.

Mr. D. L. Lack also informs us that he found a Mistle-Thrush's nest in a small thorn bush near Littlestone, Kent, on April 15th, when it contained young birds, which left the nest on April 19th. On visiting the spot towards the end of the month Mr. Lack found a Mistle-Thrush incubating another clutch of eggs in the same nest.

Mr. W. D. Shaw states that on April 30th, 1927, he found a Mistle-Thrush's nest near Marlborough with four nestlings, which vacated the nest on his approach. On May 27th he was surprised to find four eggs in this nest and on June 7th it contained three well-grown nestlings. The nest at this date was in a very insecure condition, and would probably have fallen down had not Mr. Shaw tied it up with string and fastened it to the tree.

LATE MARTINS IN HAMPSHIRE.—Lord Montagu informs us that he saw four Martins (*Delichon urbica*) at Beaulieu on November 27th, and one on December 7th, 1928. Stragglers are frequent up to the middle of November but very scarce later.

ABUNDANCE OF LITTLE OWLS IN NORFOLK.—We are informed that on an estate—of 4,300 acres—on the borders of Norfolk and Suffolk, 151 Little Owls (*Athene n. vidalii*) were killed in 1926, and 77 in 1928.

STORM-PETRELS IN BUCKINGHAMSHIRE AND SOMERSET.—Capt. H. L. Cochrane informs us that a Storm-Petrel (*Hydrobates pelagicus*) was picked up dead in the middle of a small spinney at Whaddon on November 28th, 1928. The bird proved on dissection to be a male. The stomach contained no traces of any food whatever.

The Rev. C. J. Pring writes us that a Storm-Petrel was picked up dead in a garden at West Coker, near Yeovil, on November 29th, 1928. Both these birds appear to have been blown inland by storms at this time.



LETTERS



THE BIRDS OF OXFORDSHIRE, BERKSHIRE AND BUCKINGHAMSHIRE: AN APPEAL FROM THE OXFORD ORNITHOLOGICAL SOCIETY.

To the Editors of BRITISH BIRDS.

SIRS,—May I be spared a little space to invite the attention of your readers to the *Annual Report of the Oxford Ornithological Society on the Birds of Oxfordshire, Berkshire and Buckinghamshire*. This Report, the last issue of which you were good enough to notice very favourably recently, has now been published regularly for some years, and is intended to cover the whole of the above three counties, which are not catered for by any other similar publication. We have already a number of valuable correspondents in some of the districts more remote from Oxford, but considerable areas, especially in Bucks. and some parts of Berks., are still very scantily or not at all represented in our list of contributors. As Editor, I cannot feel altogether satisfied with this state of things, notwithstanding the gratification which I feel at the kind reception and support which the Report has already received, and this year I am making a special effort to enlist as far as possible the co-operation of *all* keen observers throughout the area. May I, therefore, appeal to those of your readers living in or familiar with any part of the above area who are not already contributors, to support their county report by placing themselves in touch with me and contributing notes when possible. They will thus assist in making the Report what it aims at being—as fully and completely representative of the whole area as possible.

I need scarcely add that it is in no way my wish to divert from *British Birds* any records of sufficiently wide interest and importance to merit publication in a journal devoted to British Ornithology in general. The *Oxford Report* is a local report and as such aims primarily at treating matters of mainly local interest more exhaustively than is practicable or even desirable in the journals of wider scope. Special attention is given to such matters as local distribution, fluctuations in the numbers of breeding birds, arrivals and departure of migrants, and observations of a bionomical or ecological nature, where these are concerned with the area under consideration, and not wholly to records of uncommon birds, though these are not neglected.

I shall be happy to give further details about the Report or the Society, or both, to anyone interested.

B. W. TUCKER.

DEPT. OF ZOOLOGY, UNIVERSITY MUSEUM, OXFORD.

AN EARLY WORK ON BIRD MIGRATION.

To the Editors of BRITISH BIRDS.

SIRS,—Referring to my notes on “An Early Work on Bird Migration” (*antea*, Vol. XXI., pp. 220–226), I find that the anonymous work I referred to is thus mentioned by George Edwards in his *Natural History of Birds*, Part II., 1747, p. 114:—

“There was published some Years ago by Mr. Charles Morton, without Date, and since republished in the *Harleian Miscellany*, Vol. II. Page 558. an ingenious, tho’ I think chimerical, Account of

the Passage of Birds, which supposes them to go to the Moon, or some invisible aerial Island fixed above our Atmosphere, with some other such like Conjectures."

The above is confirmation—if confirmation is necessary—of Charles Morton's authorship of the anonymous work in question.

HUGH S. GLADSTONE.

LATE BREEDING OF GOLDFINCHES.

To the Editors of BRITISH BIRDS.

SIRS,—With reference to the note on late breeding of Goldfinches (*Carduelis c. britannica*) in Devon (*antea*, p. 159), such cases are not uncommon in my garden on the north coast of Cornwall. The following are instances from my records:—

A brood left the nest on September 4th, 1924.

" " " " " " September 7th, 1925.

" " " " " " September 1st, 1927.

" " " " " " September 4th, 1928.

Late Greenfinches' nests also occur:—

A brood left the nest on September 3rd, 1927.

" " " " " " September 2nd, 1928.

MAWGAN, ST. COLUMB.

B. H. RYVES.

To the Editors of BRITISH BIRDS.

SIRS,—The communication by Mr. Owen Wynne of his note on the late breeding of the British Goldfinch (*Carduelis c. britannica*) in Devonshire (*antea*, p. 159) prompts me to record that I saw at the mouth of the Rhymney River in Monmouthshire, on September 29th, 1928, a family of three young Goldfinches which were following their parents around and still being fed by them. None of the young made the slightest effort to find food for itself. GEOFFREY C. S. INGRAM.

[September nests of Goldfinch with young have been frequently reported from many districts in England. Fledged young were noted in Northants on September 25th, 1895 (*Zool.*, 1896, p. 61), and three young still in the nest on October 2nd, 1901, in Derbyshire.—F. C. R. JOURDAIN.]

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NOTES ON THE NESTING HABITS OF THE PEREGRINE FALCON (2).

BY

GEOFFREY C. S. INGRAM, M.B.O.U., and
H. MORREY SALMON, M.C.

(PLATE 2.)

IN Vol. XXI., page 26, Captain H. A. Gilbert has dealt with this subject up to the time the eggs have been laid and incubation is proceeding, and so perhaps our notes may be useful as a supplement to his, for they were made at a nest which he discovered, and at which we were able to carry on observations while he was away in Scotland.



FIG. 1.—The Falcon swooping overhead,
chattering.

(Photographed by G. C. S. Ingram.)

The eyry is that which is shown in the photograph which accompanies his article, and was situated upon a cliff among the hills of South Wales. Immediately above the ledge used by the Falcons was a Raven's nest which had been occupied the previous season, when four young Ravens had been successfully reared.

On June 6th, as we climbed across the screes which lay below the eyry, it became apparent that the three eggs which



The Falcon brooding. June 6th.
(*Photographed by G. C. S. Ingram.*)



it held on the occasion of our last visit (May 24th) had been safely hatched, for both parents flew out at us, swooping around and chattering with rage, a demonstration which we have learnt by past experiences with this species and the Merlin, to connect with the presence of young in the nest, for at other times it is very rarely, if ever, indulged in.

The three white, down-clad young lay huddled together and looked to be five or six days old. They kept up a constant chorus of wheezy chuckings until their mother returned an hour later. She had flown past the ledge many times, the "whoof" of her wings as she passed the hide giving some indication of the rate at which she was flying, but at length she alighted, and, after a suspicious survey, walked quickly to the young. She dropped forward on to them and raked them under her with her bill, shuffling from side to side as she did so, puffing out her breast-feathers and partially opening her wings, but she never really got them underneath her, for they were always visible below her breast.

Three hours later the tiercel was heard calling, a long-drawn "e-eep, e-eep, e-eep," and she hurriedly left, returning almost immediately with the headless body of a pigeon held in her talons. The young were fed for twenty minutes, after which she flew off, taking the remains with her.

Other visits were made on June 13th and 20th, but on neither of them were we fortunate enough to see the young fed. They spent their time huddled together, sleeping, and rarely made a movement of any description. On each occasion our greeting by their parents was even more demonstrative and vociferous than the last, and on June 20th the tiercel came swooping down at us with a fierce noise of wings, passing above our heads at a height of only a few feet and causing us to cover-up hurriedly.

On June 27th it was possible to make a guess at the sexes of the three young. The smallest and most active of them was also the one most advanced in plumage, and we were pretty certain that it was a male. While his larger and more lethargic sisters spent most of their time in sleep, he was constantly moving about, wing-stretching and preening, regarding the heavens with a keen and quick eye, and vastly interested in every passing bird.

The ledge was in a disgusting state by this time, but there were few signs of prey to be seen upon it, only the legs of a pigeon, but below it, at the foot of the rocks, other grim remains were plentiful.

Several attempts were made by the various members of the

family, from time to time, to break up the pigeon-legs, but although they had learnt how to hold and tear, they all lacked sufficient strength as yet to accomplish this.

When we appeared on the ledge behind the hide, they all, for the first time, broke into a chorus of protest, using the harsh "yack, yack" of their parents. Meanwhile the latter



FIG. 2.—The Eyry. June 27th. The Falcon has just brought in a Pigeon.

(Photographed by G. C. S. Ingram.)

were flying around, wailing and "hacking," and the tiercel was so worked up he attempted to vent his wrath upon the falcon, for he circled above her and then, closing his wings, dropped at her like a stone, while she, avoiding his stoop with a swerve, stopped her cries and beat a retreat.

The young were still on the ledge on July 4th, but looked almost ready to leave. They greeted our arrival by adding their cries to those of their parents, and the noise they made was astonishing. The young male flew off directly we climbed



FIG. 3.—The Falcon and the two young females. July 4th.
Compare condition of the cyry with Fig. 2.
(*Photographed by H. Morrey Salmon.*)

to the hide, alighting upon a ledge a few feet away, but his sisters did not attempt to follow.

As on previous occasions, they were fed between five and six o'clock in the evening, and we came to the conclusion that after the first two weeks of their lives no food is brought in between the hours of 11 a.m. and 5 p.m.

During this period, on the days of our observation, for the greater part, both birds, unless disturbed, spent the time sitting on the rocks in various places from 200 to 600 yards approximately from the eyry. About midday they usually left for from half to one hour, but we did not see a kill brought in from any of these midday sorties.

About 4 p.m., usually, the tiercel left first, followed by the falcon a little later, and while it was noticeable that at midday they went over the hill towards the next valley, across wild and open country, in the afternoon they went in the direction of a small country town, and it was evidently from here that they obtained the pigeons on which the young were fed.

Twice the falcon was observed to return first, without prey, the tiercel bringing a pigeon later, which he plucked at one spot, and, calling the falcon, deposited on another rock on the cliff top, whence she fetched it, and eventually took it to the young.

All the birds we saw brought in were pigeons, and we found the remains only of this species among those we examined in the eyry, and, except feathers of one Ring-Ouzel, nothing else on the ground beneath it. Little or no hunting, apparently, was done in the immediate neighbourhood.

Owing to the distance of this eyry from our homes (fifty miles by car and then a stiff up-hill walk of three-quarters of an hour) it was impossible for us to reach it much before 10.30 a.m., but on more than one occasion, upon our arrival, we had found the family engaged in a meal.

VARIABILITY IN INCUBATION- AND FLEDGING-PERIODS.

BY

LT.-COLONEL B. H. RYVES.

A SCRUTINY of the attached table of records, made in Mawgan-in-Pydar, north Cornwall, merely exemplifies the fact that the periods of both incubation and fledging vary to some extent. This variability appears to be more common in some species than in others.

Of the birds which I have been able to study closely, the most susceptible to variation appear to be the Robin (*Erithacus r. melophilus*), Hedge-Sparrow (*Prunella m. occidentalis*), Wren (*Troglodytes t. troglodytes*), Nuthatch (*Sitta europæa affinis*) and the Tits. The most constant include the Blackbird (*Turdus m. merula*), Mistle-Thrush (*Turdus v. viscivorus*), Song-Thrush (*Turdus ph. clarkii*) and some of the Finches.

Climatic and food conditions, undoubtedly, have some influence over acceleration or retardation of the development of nestlings. There is, in addition, the individual element among the nestlings, as well as accidental factors that affect the phase of development at which the birds leave the nest. Parent birds appear to have but small control over their young in this matter. The mortality, especially among Tits, for this reason, is often considerable. One strong nestling will sometimes struggle out of the nest, causing the others to follow when they are too immature to face the world. I have seen this on several occasions, the result being that the young birds, unable to fly, fall into wet herbage and become too weakened to gain the bushes before night overtakes them; many of such fledglings consequently perish from exposure or attacks of enemies. Last year in my garden a brood of Great Tits (*Parus m. newtoni*) was twenty days in the nest. I saw the birds emerge from the nest-log and they were so strong and well-grown that, in less than an hour, they were flying freely. I counted the whole brood of seven three days later, when they could move with as much ease as the adults.

The variation of the incubation-period does not present such easy solution. The main difficulty, as it appeals to me, is the question "when does incubation actually begin?" By "incubation," in this sense, I mean the moment at which a change within has actually commenced. Does this change necessarily take place, with all birds, soon after brooding is in process? Is it not possible that, in some cases, the eggs may be covered for a time without producing any definite change?

The possibility that the temperature of the air has some bearing on the subject does not seem likely, but records of incubation-periods of English pheasants' eggs in India seem to put this beyond doubt. In this connexion, the following two observations may be of interest, because they occurred under the same climatic and other conditions. One Robin laid her last egg on April 5th, 1925; began to brood normally that day and hatched all five eggs on April 17th. Another Robin, in an adjacent territory, laid her fifth and last egg on April 10th, 1925, and remained on her nest the whole day and following night. At 8 a.m. on April 11th I found her absent from her nest and she stayed away till 6 p.m., when she brooded again and was settled down, later, for the night. On April 12th she brooded normally until 2 p.m., when she quitted and stayed away till 7 p.m., then returning for the night. From April 13th onwards she incubated normally, and on April 26th hatched three of her eggs, two being addled, and the brood was reared. Thus the first bird hatched in twelve days after the laying of the last egg and the second bird after sixteen days.

The case of the Cirl-Bunting (*Emberiza cirrus*), also in 1925, is a very peculiar one, tending to prove that long absences from the eggs do not necessarily kill life in the embryo. The bird laid her second egg on May 16th and sat on them for the night. On May 17th she deposited her third and last egg and began, apparently, regular incubation. On May 19th she was absent for three hours and the eggs became quite cold to the touch. On May 21st, at 4 p.m., I found the eggs very cold, and when I went again at 8 p.m., though she was again absent, the eggs were just warm. I did not visit the nest again until May 27th, when the eggs were almost ice-cold to the touch, but I saw her, later on, return to the nest. After this date I never found the eggs cold and on June 3rd, in the late afternoon, one egg was hatched, the nestling appearing to be quite normal. Unfortunately the hen was killed that evening. Next day the nestling was, of course, dead. I broke the two eggs and found one to be addled, but the other contained a dead bird that I reckoned had been ready to break shell within a few hours.

The gaps in the following table are due to the fact that I only recorded the dates of hatching where I was absolutely certain. However, in all the cases given, the combined number of days of incubation (reckoned from the laying of the last egg) and of fledging, are recorded.

TABLE OF INCUBATION- AND FLEDGING-PERIODS.

(OBSERVATIONS MADE IN MAWGAN-IN-PYDAR, N. CORNWALL.)

Species.	No. of eggs in clutch and hatched.	Incubation- period in days.	Fledging- period in days.	Combined period of incubation and fledging in days.
Greenfinch				
(<i>Chloris ch. chloris</i>) ...	5 (5)	—	—	25
do. ...	5 (5)	—	—	27
do. ...	5 (5)	—	—	28
Goldfinch				
(<i>Carduelis c. britannica</i>)	4 (4)	12	13	25
do. ...	4 (2)	13	14	27
Cirl-Bunting ⁽¹⁾				
(<i>Emberiza cirrus</i>) ...	3	17	As described	
Pied Wagtail	6 (5)			
(<i>Motacilla a. yarrellii</i>)	(very strong)	13 & 14	15 & 16	28 & 30
Nuthatch ⁽³⁾				
(<i>Sitta c. affinis</i>) ...	7 (7)	13	25	38
do. ⁽⁴⁾ ...	6 (6)	17	24	41
Great Tit (<i>Parus m. newtoni</i>)	8 (8)	12	16	28
do. ⁽¹⁾ ...	7 (7)	13	20	33
Blue-Tit				
(<i>Parus c. obscurus</i>) ...	9 (5)	—	—	29
Goldcrest				
(<i>Regulus r. anglorum</i>)...	(All)	—	—	32
do. ...	(All)	15	21	36
Song-Thrush				
(<i>Turdus ph. clarkei</i>) ...	4 (4)	12	14	26
do. ...	5 (5)	13	13	26
do. ...	4 (4)	13	13	26
Robin				
(<i>Erithacus r. melophilus</i>)	5 (4)	12	14	26
do. ⁽¹⁾ ...	5 (5)	12	13	25
do. ⁽¹⁾ ...	5 (3)	16	14	30
do. ...	5 (4)	—	—	29
do. ...	5 (5)	—	—	26
Hedge-Sparrow				
(<i>Prunella m. occidentalis</i>)	4 (4)	15	14	29
do. ...	2 (2)	15	died in nest	—
do. ...	4 (2)	11	13	24
do. ...	4 (2)	11	13	24
Wren				
(<i>Troglodytes t. troglodytes</i>)...	8 (8)	—	—	37
do. ...	6 (6)	14	18	32
Wood-Pigeon				
(<i>Columba palumbus</i>) ...	2 (2)	—	—	37
do. ⁽²⁾ ...	2 (2)	—	—	42

⁽¹⁾ As described.⁽²⁾ Fledged November 2nd, 1927.⁽³⁾ Fledged June 8th, 1922.⁽⁴⁾ Fledged May 28th, 1923.

BIRDS MARKED ABROAD AND RECOVERED IN BRITISH ISLES.*

No.	Place and Date Ringed.	Place and Date Recovered.
LONG-EARED OWL (<i>Asio o. otus</i>).		
Zool. Stat. Helgoland. 39815	Heligoland, 27.12.27. Ringed on migration.	Near Whitby (Yorks.), August 20th, 1928, by Gilbertson & Page Ltd.
ROUGH-LEGGED BUZZARD (<i>Buteo lagopus</i>).		
Mus. Stockholm. B.189.	Jämtland, Sweden, 13.7.26	Moy Hall (Inverness.), late 1926 or early 1927. Pub- lished <i>Scotsman</i> , 1927.
HERON (<i>Ardea c. cinerea</i>).		
Göteborg, 688 E.	Fjäras, Halland, Sweden, 16.6.27.	A river in Yorks., May, 1928.
TURTLE-DOVE (<i>Streptopelia turtur</i>).		
Belge 26. 4653348	Ring on a Carrier Pigeon from Lede, near Ghent, Belgium, which was lost May, 1927. Details of transfer of ring not ascertainable.	Fair Isle, Shetland, 8.9.27, by J. H. Stenhouse. Pub- lished <i>Scot. Nat.</i> , 1928, p. 127. Further details from le Directeur, Musée Royal, Brussels.
LAPWING (<i>Vanellus vanellus</i>).		
Göteborg, 5562 C. Ditto, 4328 C.	Öland, Baltic, 11.6.27. Broby (Vänern), Väster- götland, Sweden, 19.6.26.	Devonshire, January, 1928. Oxlade, Ely (Cambs.), 23.2.28.
CURLEW (<i>Numenius a. arquata</i>).		
Göteborg, 1362 D. Ditto, 1887 D. Ditto, 1886 D. Ditto, 1852 D.	Öland, Baltic, 22.6.25. Ditto 22.6.26. Ditto ditto. Ditto 24.6.26.	Hull (Yorks.), May, 1926. Thurles (Tipperary), Ire- land, 28.12.26. Near Drogheda (Louth), Ireland, October, 1926. Ballinfull (Sligo), Ireland, 28.1.27.
HERRING-GULL (<i>Larus a. argentatus</i>).		
Leiden. 61042	Bergen (Nord), Holland, 22.7.28, juv.	Blakeney (Norfolk), 5.9.28, B. B. Riviere.

* I am much indebted to Prof. Dr. L. A. Jägerskiöld of Göteborg, Sweden, for giving me details in a number of cases of the following recoveries, records of which I had not previously received.—H.F.W.

No: Place and Date Ringed. Place and Date Recovered.

BLACK-HEADED GULL (*Larus r. ridibundus*).

Göteborg,	Maklappen, Sweden,	R. Ouse (Yorks.), 7.12.22.
1297 C.	5.7.22.	
4824 C.	Ditto	20.6.25. River Aire, near Skipton (Yorks.), 28.12.25.
3320 C.	Ditto	1.7.25. Seaton Sluice, Seaton Delaval (Northumb.), 25.10.25.
8220 C.	Ditto	20.6.27. Newbiggin-by-the-Sea (Northumb.), 24.10.27.
4916 C.	Ditto	20.6.25. Lowton, near Leigh (Lancs.) 1.1.26.
1292 C.	Ditto	5.7.22. Boston (Lincs.), 26.12.23.
2779 C.	Ditto	2.7.24. Wisbech (Cambs.), 20.12.27.
7522	Ditto	9.7.27. Whissonsett (Norfolk), 20.11.27.
2400 C.	Ditto	22.6.24. Near Great Yarmouth (Norfolk), 18.1.25.
7059 C.	Ditto	23.6.27. Lowestoft (Suffolk), 20.11.27.
7405 C.	Ditto	2.7.27. Leigh-on-Sea (Essex), 8.1.28.
1689 C.	Ditto	1.7.25. Ashford (Middx.), 20.10.24.
4071 C.	Ditto	18.6.26. Park Royal N.W., 30.10.26.
3967 C.	Ditto	17.6.26. Newhaven (Sussex), 31.10.26.
4811 C.	Ditto	20.6.25. Canterbury (Kent), 16.1.26.
2216 C.	Öland, Baltic,	19.6.24. Cheltenham (Glos.), 10.2.26.
1919 C.	Ditto	June, 1924. Portishead (Som.), 25.1.26.
Belge 24.	Ring on Carrier Pigeon	Wales, October, 1927, by
6538673	from Antwerp which	F. Staples, per British
	was lost end 1924. De-	Museum.
	tails of transfer of ring	
	not ascertainable.	

COMMON GULL (*Larus c. canus*).

Göteborg,	Vänern, Sweden, July,	Terrington Marshes, near
811 D.	1922.	King's Lynn (Norfolk), Summer, 1923.
3517 C.	Island of Tylön, Sweden,	Docking (Norfolk), 26.1.27.
	July, 1925.	
1005 D.	Gasö, Bohuslän, Sweden,	Canvey Island (Essex),
	6.7.24.	1.11.25.
3042 D.	Island of Tylön, Sweden,	Kirby Cross (Essex),
	24.6.27.	13.11.27.
2607 D.	Onsala, Sweden, 9.7.26.	Strood (Kent), 2.2.28.
2009 D.	Island of Tylön, Sweden,	Haverfordwest (Pembroke),
	July, 1926.	10.1.27.
2225 D.	Ditto	July, 1925. Hull (Yorks.), 10.11.27.
4080 D.	Onsala, Sweden, 19.7.27.	Near Grimsby (Lincs.), 30.1.28.

NOTES

THE INCUBATION- AND FLEDGING-PERIODS OF SOME BRITISH BIRDS.

THE following data were obtained during 1928, those marked * from north Westmorland, the rest from north Cumberland.

Species.	Incubation- Period in Days.	Fledging- Period in Days.
Greenfinch (<i>Chloris ch. chloris</i>) ...	14	13
Bullfinch (<i>Pyrrhula p. nesa</i>) ...	12	—
Tree-Pipit (<i>Anthus t. trivialis</i>) ...	—	13
Grey Wagtail (<i>Motacilla c. cinerea</i>)	14	12
Stonechat (<i>Saxicola t. hibernans</i>)	—	15
Martin (<i>Delichon u. urbica</i>) ...	—	22
*Peregrine Falcon (<i>Falco p. peregrinus</i>)... ..	—	36
Merlin (<i>F. c. æsalon</i>)	—	25
*Kestrel (<i>F. t. tinnunculus</i>)	—	27
*Buzzard (<i>Buteo b. buteo</i>)	—	41
*Wood-Pigeon (<i>Columba p. palumbus</i>)	—	29
*Sandpiper (<i>Tringa hypoleucos</i>) ...	20	—
Landrail (<i>Crex crex</i>)	19	—

R. H. BROWN.

THE following observations on incubation- and fledging-periods were made at Brighouse, Yorkshire, during 1928.

Species.	Incuba- tion period in days.	Fledging- period in days.	No. of Eggs.	No. Fledged.
†Greenfinch (<i>Ch. ch. chloris</i>)				
1st brood ...	14	13-14	5 3	(2 young died)
2nd brood ...	12-13	16	5 5	
(Nests about 3 yds. apart.)				
Linnet (<i>C. c. cannabina</i>) ...	12	13th	5 5	
Redbreast (<i>E. r. melophilus</i>)				
1st brood ...	14th	12-13th	5 3	(2 infertile)
2nd brood ...	14th	10-11th	3 3	
Hedge-Sparrow (<i>P. m. occiden- talis</i>)	14th	13	4 2	(1 infertile)
3rd egg ...	15th	died on third day.		

J. C. S. ELLIS.

† Interval of thirteen days between first fledging and first egg of second brood.

EAST TO WEST MIGRATION ACROSS THE ENGLISH CHANNEL IN JANUARY.

A FEW years ago I recorded immigration of Larks at Dungeness in early January. I was staying there again at the same season this year (December 28th to January 2nd) with Messrs. F. R. Barlow and J. D. Wood, and following easterly winds, which set in on December 31st, we witnessed the same phenomenon, though different species were involved.

On January 1st, 1929, a flock of Starlings (*Sturnus vulgaris*) came in from the east, flying strongly, about 8.30 a.m., the wind being then north-east and rather fresh. About 1.30 p.m. the same day, on Romney Marsh, some miles from the coast, a flock of sixty or more Snow-Buntings (*Plectrophenax nivalis*) flew past us westwards; they appeared to settle some distance away, but we could not find them, and in any case I think they were probably engaged in a similar westward flight.

Next morning Starlings were again arriving from oversea and crossing the shingle in flocks, going rather north of west. The wind had become almost due east and was strong. We also saw a small party of Linnets (*Carduelis cannabina*) flying north-west across the shingle, and at midday, when the wind had increased, a single Linnet reached the shore, west of the point, apparently coming from the south, and settled.

The Dungeness watchers seem to regard this east to west passage of Starlings, Larks and Finches as a regular feature when cold weather comes from the north-east in winter. It would be interesting to know how late it continues.

H. G. ALEXANDER.

HOUSE-SPARROW AS PROBABLE FOSTER PARENT OF CUCKOO.

My sister-in-law, Miss Fisher of Rathgar, Dublin, tells me that in the summer of 1928 she saw a young Cuckoo (*Cuculus c. canorus*) being fed by a House-Sparrow (*Passer d. domesticus*) on the grass plot in front of her house. The plot is not more than five yards wide and there are terraces of houses all down each side of the road, over which there is constant traffic. Miss Fisher is no ornithologist, but I suppose the small bird reaching up to feed a big nestling is unmistakeable. I could find no notice of the House-Sparrow being victimized by the Cuckoo until I read Mr. Edgar Chance's note (*antea*, p. 141). I should also like to know what instances are recorded of the Cuckoo laying in suburban gardens. C. S. S. ELLISON.

[For list of cases where the House-Sparrow has been victimized by the Cuckoo see *The British Bird Book*, II., p. 490; cf. also *Brit. Birds*, VII., p. 264.—F.C.R.J.]

SONG-PERIOD OF CORN-BUNTING.

IN *A Practical Handbook of British Birds* (Vol. I., p. 110) the song-period of the Corn-Bunting (*Emberiza c. calandra*) is said to be from February to October.

During 1927 I heard this bird in full song in the extreme north of the Isle of Skye up to November 12th, when I left the district. In 1928 it was in full song on five days up to December 4th. I left the island on December 8th, and between the 4th and 8th there were fine periods but the song was not heard. The birds which sing so late appear to be the same individuals which have nested in that locality, for they use the same stations for singing. AUDREY SETON-GORDON.

WOOD-LARK IN LANCASHIRE.

ON December 17th, 1928, I saw a Wood-Lark (*Lullula arborea*) on the river side near Nelson, Lancs. It was feeding amongst the stones and allowed of sufficiently near approach for certain identification. The short tail was the most noticeable feature, but the crest, colour of legs and pale eye-stripe also marked it down as being undoubtedly of this species. In my experience it is an uncommon bird in this district.

D. F. JOPSON.

PROBABLE WATER-PIPIT IN WORCESTERSHIRE.

SINCE I published a note on the Water-Pipit's status in England in May, 1924 (*British Birds*, Vol. XVII., pp. 304-5), I have looked for them in vain every autumn until 1928. After the dry summer there was more mud than for some years past by the Upper Bittell reservoir during the past autumn, and below the open mud were stretches of *Polygonum amphibium*, providing just the feeding-grounds that *Anthus s. spinoletta* seems to like. On September 26th two Pipits flew over, making a note that sounded like *A. s. spinoletta*; a little later I saw two dingy-looking Pipits at the edge of the mud at some distance, but at that moment a Snipe got up and the Pipits took alarm, and I could not find them again. On October 11th I could only see Meadow-Pipits (*A. pratensis*); but on the 20th, in the company of Mr. F. R. Barlow, I put up a single bird two or three times, and each time it made the *spinoletta* note. As in earlier years, it was very difficult to detect among the *Polygonum*, and on rising it flew long distances. But once, at least, we got near enough to see its generally dull colour; and I think it showed a little white in the sides of the tail as it rose from the ground. I could not see it on November 8th or subsequently.

H. G. ALEXANDER.

GREAT GREY SHRIKE IN CUMBERLAND.

ON January 9th, 1929, I saw a Great Grey Shrike (*Lanius excubitor*) at Keswick, Cumberland. Its flight was direct but undulating, and the black wings with a white bar, the grey back, almost pure white rump and black tail with white outer feathers were noticeable features. D. F. JOPSON.

GREAT GREY SHRIKE IN GLOUCESTERSHIRE AND ITS "LARDER."

ON December 24th, 1928, near Bourton-on-the-Water, Gloucestershire, I observed a Great Grey Shrike (*Lanius excubitor*) fly from an isolated thorn-bush. On examining the bush, which was about ten feet high, I saw a Linnet hung on a thorn about five feet up; it was headless, and the thorn was driven right through the neck. The ground at the foot of the bush was littered with feathers of Linnet and Goldfinch. A further examination of the bush showed traces of feathers and dry blood on most of the stoutest thorns, which had undoubtedly been used for hanging prey. I saw another bird of this species about two miles lower down the Windrush Valley on November 27th, but found no larder. A. G. TAYLER.

INCUBATION BY GREAT TIT OF NUTHATCH'S EGGS.

ON May 2nd, 1924, in my garden in Mawgan-in-Pydar, N. Cornwall, a Great Tit (*Parus m. newtoni*) completed her nest in log (A), but did not lay.

In log (B), 60 yards distant, a Nuthatch (*Sitta c. affinis*) was in process of laying. The pair had successfully reared a brood in this log both in 1922 and 1923.

On May 4th, about 10 a.m., I watched the Nuthatch leave her nest after laying her fifth egg and covering it up with dead leaves. About 11 a.m. I observed a Great Tit, with material in her beak, enter log (B). Two hours later the Nuthatch's nest was completely hidden by masses of loose moss. On May 5th, 6th and 7th the Tit continued to carry in large quantities of moss and on the 8th laid her first egg on the dishevelled pile of moss and, on each succeeding day, laid an egg and covered up each with lumps of wool.

On May 15th the Tit laid her eighth egg and there was a perfect nest with the usual wool lining, containing thirteen eggs (eight of the Great Tit and five of the Nuthatch). The Tit commenced and continued incubation of both clutches, but only seven of her own eggs (and none of the Nuthatch) were

hatched. Only one of the nestlings was reared, six dying when nearing the fledging state.

I never saw the Nuthatches again after 10 a.m. on May 4th. The Tits were undoubtedly the pair from log (A).

The following June, when about to clean out this log (A) for disinfection, I found a large bumble-bee ensconced in a woven compartment just under the wool lining of the Great Tit's original nest.

B. H. RYVES.

WRENS ROOSTING IN MARTIN'S NEST.

WITH reference to Dr. B. B. Riviere's note on Wrens (*T. t. troglodytes*) roosting together in Martins' nests (*antea*, Vol. XX., p. 262), ever since (or before) December 11th, 1928, a party of Wrens have roosted in a House-Martin's nest on my house near Earls Colne, Essex, about twenty feet from the ground; this evening, January 19th, I definitely counted ten enter the one nest.

R. SPARROW.

CURIOUS MORTALITY AMONG WRENS.

ON the morning of January 17th, 1929, the bodies of twelve Wrens (*Troglodytes t. troglodytes*) were found in the stable-yard alongside my house at Sevenoaks, Kent. Eight of them were close together and the other four within a few yards. They were all fat and appeared in excellent condition. The yard is on the north side of the house with ivy on the house wall. There was about one inch of snow on the ground and the screen thermometer that morning was 22° Fahr. There are two telephone wires and an aerial six or seven yards away. There were no external signs of injury on the bodies. There is a stokehold for central heating in the basement a few yards away.

It seems possible that if the Wrens were roosting together they might have been gassed, but it is difficult to imagine how.

Wrens are fairly common in this neighbourhood; but it is rare to see more than two together, except a family party after nesting time.

I am completely at a loss to account for this occurrence and should be very glad to hear of a possible explanation.

J. M. ROGERS.

[A very similar case, when twelve Wrens were found dead in the morning after a cold night, was reported by Dr. Riviere (Vol. XX., p. 262). In this case thirty or more Wrens were seen going to roost the night before in old Martins' nests. Judging by Prof. Rowan's experiments on the effects of

extreme cold on birds (see Vol. XVIII., pp. 296-9 and Vol. XX., pp. 253-4) it would not seem likely that cold was directly responsible for the death of these Wrens.—EDS.]

NEST OF SWALLOW IN A MUG.

WITH reference to the nest of a Swallow (*Hirundo r. rustica*) in a bowl (*antea*, p. 160) it may be worth recording that some years ago I was shown a nest in a beer-mug in a shepherd's hut on Breydon Marsh. The birds came in and out through a broken window, to the delight of the marsh-farmer, who left the broken panes alone.



The birds seem to have dropped soft mud in the pot ; then stuck some straws on the edge of the mug, which also stuck, and on this foundation built their clay nest.

After the young birds left, I secured the mug and nest, and placed them in the Tolhouse Museum, Yarmouth.

A. H. PATTERSON.

SHELD-DUCKS BREEDING IN TREES IN SUFFOLK.

WITH reference to Mr. J. U. Todd's note on this subject (*antea*, p. 191) it may be worth noting that in May, 1926, and in April, 1927, I found the nest of a Sheld-Duck in a hollow of a large willow tree growing beside a small mere on the (new) Ipswich Golf Course. In the former case the bird was sitting and the eggs were covered with down ; in the latter incubation had not begun and the eggs were uncovered. The nest could almost be reached from the ground. A keeper told me he had found a nest in a tree close to the Orwell and a boy found another in a similar situation, so that this would seem to be a not uncommon habit in this part of Suffolk.

T. G. POWELL.

[Apparently this habit is a purely local one and possibly is due to cold, heavy soil being unsuitable for breeding purposes ; light, sandy ground being preferable.—EDS.]

GARGANEY IN WORCESTERSHIRE.

ON September 22nd, 1928, I put up a Garganey (*Anas querquedula*)—a drake, judging from the amount of grey in the wing—with some Teal at the Upper Bittell reservoir. On September 26th there was no sign of it. H. G. ALEXANDER.

LONG-TAILED DUCK IN MERIONETH.

MR. E. H. T. BIBLE reports a female Long-tailed Duck (*Clangula hyemalis*) on the Dovey estuary on December 17th, 1928, and two on the same water on the 26th. H. E. FORREST.

LONG-TAILED DUCKS IN HERTFORDSHIRE AND THEIR DIVING HABITS.

ON November 1st, 1928, and again on the 2nd, 4th and 5th, I saw two immature Long-tailed Ducks (*Clangula hyemalis*) at Tring. This species is known to have occurred at Tring on five previous occasions in the last forty years. Of these, four were in November and the fifth within three days of the beginning of that month. The evidence is perhaps insufficient to argue a regular movement at this season, but such punctuality suggests something more than mere coincidence.

On November 1st the two birds were on the same reservoir, diving incessantly during the half-hour that I spent with them. On the 4th, when I was at the reservoirs with Mr. Bertram Lloyd, the larger bird, which I took to be a male, had moved to an adjoining reservoir, where its isolation

enabled us accurately to time its dives. Two series of seven consecutive dives gave an average of 34.3 seconds below and 7.9 above water (35:6, 34:8, 30:7, 31:5, 35:8, 38:5, 30:9 and 38:7, 36:10, 31:8, 33:11, 34:9, 39:8, 36:9), *i.e.*, 81.3 per cent. of the time was spent below. On the 5th a series of eight and another of nine gave rather different results (38:8, 39:7, 42:7, 40:15, 43:8, 39:7, 38:25, 40:7 and 32:14, 30:26, 39:15, 41:10, 40:9, 45:12, 46:9, 42:14, 41:8), an average of 40 seconds below and 11.8 above, *i.e.*, the bird was below the surface for 77 per cent. of the total time.

Most, perhaps all, diving ducks, when intent on feeding, swim lower in the water than when at rest and the tail is then awash and slightly expanded. In some, *e.g.*, Tufted Duck, Pochard, Scaup and Red-crested Pochard, no further expansion takes place when the bird dives, but in others, *e.g.*, Common Scoter, Goldeneye and Smew, the tail-feathers are distinctly fanned as the bird goes down. In the Long-tailed Duck this pectination is much more apparent than in any other species I know, and the individual feathers stand out like the fingers of an outspread hand. But more remarkable is the way in which the bird half opens its wings in the act of diving, just as a Guillemot does, a habit it shares with the Harlequin (J. G. Millais, quoting W. H. St. Quintin, *Brit. Diving Ducks*, I., p. 141) and, according to Dr. C. W. Townsend (*Auk*, XXVI., p. 240), with Eiders and Scoters too. Personally I have never remarked this habit in either Eider or Scoter. Most diving ducks, *e.g.*, Tufted Duck and Pochard, as may be seen in the London parks on any winter day, go down and swim below water with wings pressed close to the body. Dr. Townsend (*loc. cit.*) asserts that Long-tail, Harlequin, Scoters and Eiders use their wings for propulsion under water, and it may be that opening the wings in the act of diving is correlated with that action.

CHAS. OLDHAM.

FOOD OF BITTERN IN LANCASHIRE.

I REGRET to record that on January 1st, 1929, a Bittern (*Botaurus c. stellaris*) was shot at Rusland, which lies about half-way between Lakeside, Windermere, and Nibthwaite, at the foot of Coniston. It was a female; the stomach contained a minnow, two sticklebacks and a small eel, all much digested, with some vegetable matter. This is the third occurrence in this immediate neighbourhood, the earlier dates being February, 1857, and January, 1896.

CHARLES F. ARCHIBALD.

SLAVONIAN GREBE IN WORCESTERSHIRE.

ON October 11th, 1928, there was a single Slavonian Grebe (*Podiceps auritus*) on the Upper Bittell reservoir. After it had flown across the water I was able to get quite close to it behind a hedge. The straight, short, rather thick beak was noticeable ; and the white on the face extended back behind the eye, so that there was only a narrow line of black on the upper neck. It also seemed to me that, except on the top of the head, the dark colour was less intense than it usually appears on *P. nigricollis*. The latter is certainly a much more frequent visitor to these waters. Mr. E. St. G. Betts saw this bird on October 13th and confirmed the identification. On the 20th it had disappeared. H. G. ALEXANDER.

GREAT SHEARWATER IN SUFFOLK.

ON January 7th, 1929, a Great Shearwater (*Puffinus gravis*) was picked up by Mr. C. G. Doughty on Gorleston beach, which is on the south side of Yarmouth harbour-mouth, and therefore on the Suffolk side of the Norfolk boundary. It proved on dissection to be a male, and is now in my collection.

This species appears very rarely to visit that portion of the North Sea which lies within the latitude of the Norfolk and Suffolk coasts. The only specimen which has been obtained in Norfolk was picked up on the beach at Caistor on December 22nd, 1892. Another was seen by E. Ramm at Cley on August 14th, 1896, and one which was probably the same bird by Mr. R. Gurney on August 25th. The only previous record for Suffolk, so far as I am aware, is one which was shot off Lowestoft on November 10th, 1898. B. B. RIVIERE.

PASSAGE WADERS AT NORTH WORCESTERSHIRE RESERVOIRS IN 1928.

OWING to the presence last autumn of extensive tracts of mud by the margins of Upper and Lower Bittell reservoirs, the number of waders observed by these waters greatly exceeded the average.

The Green Sandpiper (*Tringa ochropus*) was particularly noticeable, and the first seen by myself was one on July 7th in the company of four Common Sandpipers. One or two of the species were seen on each of three subsequent July visits, and while staying in the district from August 4th to August 11th, one or two were seen on every day except the last. The latest date noted by me was on September 1st, but Mr. H. G. Alexander saw one on September 13th.

A Greenshank (*Tringa nebularia*) was seen by Mr. Alexander at Lower Bittell on August 15th, and I saw one there myself on September 1st. On September 8th one flew from the large to the small reservoir, and I have some reason for thinking that a Greenshank frequented the district from the first date to the last.

Common Sandpipers (*Tringa hypoleucos*), although frequently seen, were not numerous, and nine on July 7th was the highest number noted for a single day. Although more often seen from the above date onward, I have notes of the species in April, May, and June of last year. My latest autumn record is September 15th.

The first of the few returning Redshanks (*Tringa totanus*) observed was seen on July 14th and the last on August 25th, three being the most seen on a single day.

The first Dunlin (*Calidris alpina*) seen by me was on July 21st, a bird with the black of the lower breast broken by paler colour, and two seen by Mr. Alexander on July 26th were both black-breasted. The occurrence of some nuptial black plumage was noted by me on six later occasions, the last being on September 18th, when one of two birds seen by us still retained some dark plumage. The last date noted was October 20th, when Mr. Alexander and myself, independently of one another, saw three birds. On two occasions I saw a considerable flock of unidentified waders in flight which probably comprised many of this species.

A Little Stint (*Calidris minuta*) was seen by me on August 25th by Upper Bittell in the company of Dunlins and Ringed Plovers.

A Ruff (*Philomachus pugnax*) was seen by Upper Bittell on September 10th by Messrs. F. R. Barlow and J. D. Wood.

A Ringed Plover (*Charadrius h. hiaticula*) was seen by Mr. Alexander on August 11th beside Lower Bittell, and two on August 15th. On August 18th I saw five by Upper Bittell in the company of Dunlins and a Redshank, and on August 25th four by this water and five by Lower Bittell. The last seen was on September 18th, when the above observer and myself saw one that was evidently a bird of the year.

While not coming strictly within the limits of this note, I should like to record the occurrence of two Ringed Plovers by Lower Bittell reservoir on June 2nd. Possibly these were a pair of late northward-faring migrants, and may have been making overland for a breeding station in one of the Western Isles.

E. ST. GEORGE BETTS.

MOOR-HEN CLIMBING WIRE-NETTING.

A MOOR-HEN (*Gallinula c. chloropus*) has this winter formed the habit of visiting chicken-runs at Bottesford Rectory, Leicestershire. The runs are close to the river Devon, and to gain access to them the bird climbs the 6-ft. wire-netting. It travels straight up the netting, flapping its wings violently all the time, and moving at a great pace. On reaching the top of the wire it flies down into the enclosure.

The bird goes from one chicken-run to another in this manner. It has also been seen to climb up the side of a hen-house, which had been covered with tarred felting and then "slatted" with wood. F. K. STAUNTON.

GREAT GREY SHRIKE IN SOMERSET.—Mr. C. R. Stonor informs us that on December 8th, 1928, he watched a Great Grey Shrike (*Lanius excubitor*) near East Harptree, about twelve miles south of Bristol. When first seen the bird was perched in a small willow by the side of a road, then flew to the top of a small oak, where it was watched for several minutes until it disappeared into a willow-clump.

LETTER.

"WING-CLAPPING."

To the Editors of BRITISH BIRDS.

SIRS,—After reading carefully Mr. Coward's article (*antea*, p. 134) and Col. Ryves's letter (*antea*, p. 171), I would like to suggest an explanation of wing-clapping which occurred to me years ago, after observing domestic Pigeons make this noise within a few—perhaps 15—feet of me and finding myself unable to see the wings strike each other. I have heard the same thing repeatedly with Wood-Pigeons (*Columba palumbus*), but the opportunity to see whether their wings came together or not has never been anything like as favourable as in the former case.

The noise itself has always reminded me of that produced by striking a folded fan against a firm object so that the ribs are brought sharply together. This led me to wonder whether the remiges could act in the same way and from that idea to a line of thought which I will try briefly to make clear.

During the downward stroke of the extended wing the air below it is compressed and so exerts pressure upwards on the under wing-surface. Similarly, during the upward stroke, pressure is exerted downward against the upper surface. This pressure tends to push each feather up and down in reference to the body of the wing, and any motion so produced would be in the nature of bending up and down about the fixed point of the feather's insertion, much as a sapling sways back and forth in the wind. The same relative motion between wing-body and feather would be produced if the former were held rigidly while the latter was subjected to strong air pressure alternately from above and below.

By reason of the overlapping arrangement of the flight-feathers, each of them on the downward stroke of the wing is brought up against the feather adjoining it on the inside and the whole row then acts like a continuous sheet of material. On the upward stroke, however, the outermost feathers are not provided with any support against pressure downward from above and give somewhat, the larger feathers, because of their size, doing so more than the smaller ones. Thus each of a certain number separates a little from its neighbours as, I believe, is known to be the case.

This occurs during the upward stroke of the wing. Then, at the beginning of the powerful down stroke, the sudden application of pressure in the opposite direction from beneath the wing must bring those same feathers sharply together again, and possibly they hit each other hard enough to make the noise with which all observers of birds in this part of the world are familiar.

THOMAS H. MCKITTRICK, JUNR.

REVIEWS.

Bird Watching on Scoll Head. By E. L. Turner. (Country Life.) 12s. 6d.

MISS TURNER has written a very entertaining and at the same time ornithologically interesting account of her experiences as official "watcher" for Scoll Head during 1924 and 1925. Her trials were many, essentials such as water and fuel were hard to come by, but, worse than all, the publicity given by the press, but entirely unsought by the watcher, to Scoll Head as a bird reserve under the National Trust, brought innumerable visitors. With the best intentions possible the harm done to eggs and young by parties of visitors could not be avoided. But Miss Turner is a philosopher with a keen sense of humour, and she triumphed over difficulties.

Separate chapters containing much of interest are devoted to the breeding-habits of Ringed Plover, Common, Little, Sandwich and Roseate Terns, Redshank, Oystercatchers and Sheld-duck, while there are chapters on the Spring and Autumn Migrations. The latter especially, contains some valuable observations.

Although Miss Turner's more important notes have already been published in the *Transactions of the Norfolk and Norwich Naturalists' Society*, this book will be welcomed by bird-lovers, and it may be hoped that it will fire some young enthusiasts to take up systematic observations on migration, which are still much needed.

Finally, a word of praise must be given to the illustrations, all of which are good, while many are really beautiful.

Les Oiseaux de la Faune Belge. Par le Chevalier G. C. M. van Havre (Bruxelles: M. Lamertin). 150 francs.

This is a carefully prepared and up-to-date Handbook on the birds of Belgium and fills a distinct gap in ornithological literature. In classification and nomenclature the author has followed Dr. Hartert, French and Flemish names are given and in the synonymy are to be found references to the original description and the chief Belgian authors. The distribution of each bird in Belgium is given in some detail as well as a general distribution, and special notes are often

added regarding the status of a bird in neighbouring countries. The book is thus much in the form of our *Hand-List*, but there are added Keys to Families, Genera and Species.

A comparison of the Belgian and British breeding birds is of considerable interest. The following are represented by different subspecies: Magpie, Jay, Goldfinch, Bullfinch, Yellow and Pied Wagtails (*M. f. rayi* has bred in Belgium as *M. f. flava* has bred here, and the same may be said for *M. a. yarrellii* and *M. a. alba*), Creeper, Nuthatch, all the Tits except for the Long-tailed, which in the west of Belgium is, according to M. van Havre, *Ægithalos c. roseus*, though he thinks it probable that the form breeding in the eastern part will be found to be *Æ. c. europæus*, Goldcrest (the breeding Belgian Song-Thrush is considered to be *T. ph. clarkei*), Stonechat, Robin, Hedge-Sparrow, Dipper, Greater and Lesser Spotted Woodpeckers, Tawny Owl, Barn-Owl, Cormorant, Black Grouse.

Excluding those birds which breed only regularly (such as the Stilt and Avocet), or have bred only occasionally or doubtfully, and also those which used to breed but do so no longer, the following list of twenty-seven species includes all those breeding regularly in Belgium and not in Great Britain, though several of these have bred here occasionally: Golden Oriole, Serin, Ortolan, Crested Lark, Short-toed Creeper, Firecrest, Great Grey Shrike, Lesser Grey Shrike (perhaps not regularly), Woodchat, Great Reed-Warbler, Icterine Warbler, Black Redstart, White-spotted Bluethroat, Hoopoe, Grey-headed Woodpecker (*Picus canus*), Middle-Spotted Woodpecker (*D. m. medius*), Black Woodpecker, Little Owl (introduced in Great Britain), Eagle-Owl, Goshawk, Honey-Buzzard, Little Bittern, Little Ringed Plover, Black-tailed Godwit, Black Tern, Spotted Crake and Hazel-Grouse.

A list of species breeding regularly in Great Britain and not in Belgium, compiled in a similar way, gives the fifty-four species following. It will be seen that many of these birds depend on sea or inland water for their food, and no doubt the extent and character of the coasts of each country have a considerable influence on its avifauna: Chough, Twite, Lesser Redpoll, Greenfinch, Rock-Pipit, Bearded Tit, Dartford Warbler, Merlin, Golden Eagle, Hen-Harrier, Grey Lag-Goose, Gadwall, Wigeon, Pintail, Pochard, Tufted Duck, Eider, Scoter, Red-breasted Merganser, Goosander, Shag, Gannet, Storm- and Fork-tailed Petrels, Manx Shearwater, Fulmar, Slavonian and Black-necked Grebes, Black-throated and Red-throated Divers, Stone-Curlew, Dotterel, Golden Plover, Dunlin, Greenshank, Red-necked Phalarope, Whimbrel, Arctic and Roseate Terns, Common, Herring-, Lesser and Greater Black-backed and Kittiwake Gulls, Great and Arctic Skuas, Razorbill, Common and Black Guillemots, Puffin, Capercaillie, Red Grouse (introduced in Belgium), Ptarmigan, Red-legged Partridge (unsuccessfully introduced in Belgium).

It is impossible here to make a comparison of migrants and scarce visitors, but it may be said that M. van Havre admits a total number of 367 forms against the 504 now included in our British List.

The publication of this useful book on the birds of Belgium makes the need for a similar work on the birds of France still more marked.

H.F.W.

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A LIST OF THE BIRDS OF INNER LONDON

BY

A. HOLTE MACPHERSON.

FOR the purpose of this list Inner London is an oblong area : the centres of the upper and lower boundaries being $2\frac{1}{2}$ miles due north and south of Charing Cross, and those of the two sides 4 miles due east and west of that point.

This area excludes all the reservoirs, but covers a densely populated district containing the central parks, except a small section of Victoria Park. The only birds included are those which have occurred within this area since the beginning of 1900, though reference is sometimes made to the status of a species prior to that date.

A great deal has been written about London birds, and naturally most of it relates to species noticed in the parks. Kensington Gardens and Hyde Park have never lacked regular observers, among whom may be mentioned Mr. J. Rudge Harding, Mr. C. A. Cresswell, Mr. R. G. Stonham, Mr. L. Parmenter and the late Mr. Harold Russell. My own almost daily notes, which now cover a period of more than forty years, relate chiefly to this region. There are, however, comparatively few records from the other open spaces. This is particularly unfortunate in the case of Battersea Park, which, from its position by the banks of the Thames, must be an excellent field for observation.

In compiling this list I have received much useful information relating to the neighbourhood of the Zoological Gardens from Mr. D. Seth-Smith ; the south-western region north of the Thames from Major A. H. Daukes and Mr. R. W. Hayman ; Battersea Park from Mr. D. W. Musselwhite, and the east end from Mr. E. C. Stuart Baker and Mr. P. W. Horn, Curator of the Stepney Borough Museum.

I have also been supplied, in some cases through the kindness of Mr. H. F. Witherby, with notes from various ornithologists besides those mentioned, including Miss M. G. S. Best, Mr. A. K. Collett, Mr. J. E. S. Dallas, Miss M. B. H. Deane, Mr. Frank Finn, Dr. P. Gosse, Mr. D. Gunn, Mr. G. E. Lodge, Dr. G. C. Low, Mr. E. G. B. Meade-Waldo, Dr. P. Manson-Bahr, Col. R. Meinertzhagen, Mr. C. Oldham, Mr. R. W. Pethen and Mrs. K. Taylor.

Mr. Witherby has also been good enough to lend me his copies of the Naturalist columns of *The Field* from the beginning of 1907 : while for information from that source

during the first seven years covered by this list I have relied, partly on extracts from *The Field* in my note books, and partly on references to it in the *Geographical Bibliography of British Ornithology*. Mr. F. R. Finch has kindly verified my references to *The Field* during this earlier period.

I am much indebted to Mr. J. Rudge Harding for taking the trouble to revise the manuscript of the list.

Where the validity of a record is doubtful, or the identity of a recorder is unknown, the record has been enclosed in square brackets.

This roll of Inner London birds is, no doubt, incomplete, but may serve as a basis for future observations. The omission of certain species will surprise those who realise that the Barn Elms reservoirs are only about half a mile from the western boundary of our area ; and it is certain that any observer who can devote time to watching the Thames and its shores at low tide will soon be able to add several species to those here mentioned.

Excluding doubtful occurrences, this list contains 126 species. Of these, 21 now breed regularly in Inner London, and 8 others have been known to breed there during the present century. Of the remainder, 20 may be considered regular visitors, while 77 are visitors of greater or less rarity.

HOODED CROW (*Corvus c. cornix*).—An occasional winter visitor. It appears to favour the shore of the Thames at Chelsea, where Mr. Clifford Borrer has repeatedly observed it on the flats at low tide (*B.B.*, XIX., p. 30). Mr. D. C. Ireland has also seen it there (*Field*, Dec. 7th, 1901). The late Mr. F. D. Power recorded one from the Battersea Park side of the same reach (*Orn. Notes from S. London Suburb*, p. 52).

CARRION-CROW (*C. c. corone*).—A few reside and breed when permitted to do so. Kensington Gardens is their favourite haunt. Sometimes I have seen a nest built in a tree on some small open space ; for instance, in The Boltons, South Kensington, in 1921, and in Eccleston Square in 1923.

This species is strongly established in the country round London, and some birds from the outlying districts appear to visit our parks daily. I have noticed Crows flying into town from the west and north-west in the early morning soon after dawn at all seasons of the year. Except in winter, most people are in bed when the birds arrive, and the Crows, finding the place quiet, frequently alight on the house-tops, whence they descend to investigate the contents of squares and even quite small gardens.

ROOK (*C. f. frugilegus*).—An occasional but very uncommon visitor to the parks north of the Thames. Mr. D. W. Musselwhite has, however, often seen it in Battersea Park. No longer breeds.

In 1900 there existed the old rookery in the garden of Gray's Inn, which for many years had contained from one dozen to two dozen occupied nests; secondly, a colony with about a dozen nests in Connaught Square near the Marble Arch, and, thirdly, a group of ten nests, seven of which were in the grounds of Kingston House, Kensington Road, and three close by in Hyde Park. The Gray's Inn rookery lasted till 1915. Some said the Rooks objected to the frequent drilling of recruits beneath their trees; others, that the birds were bullied by Crows. Anyhow, the Rooks did not nest there again, though occasionally a pair of birds revisited the place and appeared to be repairing an old nest. In 1916 four Rooks' nests were built in a plane tree in Fountain Court, in the Temple, a surprising situation, within a few feet of many windows. This position was not again occupied. The Connaught Square colony lasted till 1903. The Kingston House rookery only existed in 1900.

As is well-known, the chief London rookery was formerly Kensington Gardens, where the nests could be seen from the Broad Walk to the Serpentine. When Queen Victoria came to the throne, it numbered roughly 100 nests. These had diminished to about thirty when, in 1880, the rookery was destroyed by the felling of the trees. (As to old rookeries in London, see J. E. Harting, *Field*, April 22nd, 1876; E. Hamilton and Alfred Newton, *Zool.*, 1878, pp. 193-9, and 441-4.) In 1893 a fresh colony established itself in Kensington Gardens, and built about a dozen nests, but the place was deserted at the end of the season. During the next few years, London Rooks were very uncertain in their movements. Nests were built in one or two spots (*e.g.*, there were nests on a tree in Albion Street, Hyde Park, in 1896, and at the back of Dorchester House, Park Lane, in 1898), but these positions were only given short trials, and even the rookery in Connaught Square, which had only been established in 1891, was untenanted in 1894, 1896 and 1899.

JACKDAW (*Colæus m. spermologus*).—Resident in very small numbers. There has been a colony of Jackdaws for many years in the south-west corner of Kensington Gardens. This colony was at one time flourishing, but most of the old trees in which the birds nested have either been blown down by gales or lopped for the safety of the public. It is doubtful whether any Jackdaws have bred there during the last two years, though several birds still frequent the spot. Jackdaws, apparently unconnected with this colony, are occasionally seen in the parks; and a large flock of these birds was heard over London in the neighbourhood of the Zoological Gardens

on February 14th, 1923, it being too foggy for the birds to be seen (D. Seth-Smith, *Field*, Feb. 22nd, 1923).

MAGPIE (*Pica p. pica*).—I have only seen two birds of this species in Inner London which appeared to be wild. Mr. D. W. Musselwhite has seen one in Battersea Park.

Various Magpies which have from time to time been reported from the parks, including those which about fifteen years ago built nests in the Green and St. James's Parks, were apparently birds released from captivity.

JAY (*Garrulus g. rufitergum*).—An occasional visitor. Three were seen near Hyde Park Corner on May 8th, 1921 (A. R. Severn, *Field*, May 21st, 1921). A flock of fifteen, which may have been immigrants from the continent, visited Holland House grounds in the autumn of 1923 (*London Nat.*, 1923, p. 9); and a pair frequented these grounds for at least a fortnight in June, 1928, though I could find no evidence of any attempt to nest. Col. R. Meinertzhagen saw two from November 25th to 27th, 1928, in Kensington Palace Gardens. Mr. D. W. Musselwhite has noticed the Jay on two or three occasions in Battersea Park.

STARLING (*Sturnus v. vulgaris*).—A common resident. The large flocks which roost in London in autumn, winter and early spring have attracted attention for many years past. Their favourite roosting-places were originally islands, such as are found in the Serpentine, Hyde Park, and in St. James's and Battersea Parks, and trees in various squares and open spaces. Later, when they invaded London in greater numbers, they acquired the habit of roosting on conspicuous buildings, such as the Nelson Column and St. Paul's Cathedral. At present, the island in the Serpentine and the trees in the Dell in Hyde Park seem to be regarded merely as suitable places for a short rest before proceeding to some spot further east (see G. C. Low, *Ibis*, 1923, p. 590). The size of these nightly invasions differs considerably from year to year, but they are larger now than they were thirty-five years ago. The birds arrive shortly before dusk. When the weather is clear they sometimes enter London at a considerable height, diving down almost perpendicularly upon their resting-places. When the atmosphere is foggy I have seen them just skimming the roofs. The gatherings are often large as early as August, but sometimes decrease until towards the end of the year, when there is generally a large accession to their numbers. There is evidence that some of the hosts of immigrant Starlings which arrive in October enter England by the Thames Valley, and it might be supposed that, during that month, the flocks of London Starlings would show a marked

increase. But such would not appear to be generally the case.

It is not clear why these birds should prefer to sleep in London; nor is it easy to say whence they come. It is probable that many travel a considerable distance. When fifteen miles west of London on a winter afternoon I have seen flock after flock of Starlings flying towards the town. These flocks enter London from various directions. The majority, however, appear to come from the west.

The subject of these gatherings is worthy of study by anybody who has time at his disposal.

HAWFINCH (*Coccothraustes c. coccothraustes*).—One was picked up dead in St. James's Park on July 13th, 1926 (H. Russell, *Times*, July 24th, 1926).

GREENFINCH (*Chloris ch. chloris*).—Resident. Has lately increased. Greenfinches are always to be seen in the grounds of Holland House, where they have bred in small numbers for many years.

GOLDFINCH (*Carduelis c. britannica*).—An uncommon visitor. Has been noticed on several occasions in autumn and winter in the Kensington Gardens Bird Sanctuary. I have never seen more than two Goldfinches at a time in London, except on November 5th, 1921, when I found a small charm in the grounds of Holland House. Mr. D. Seth-Smith saw a young bird in the autumn of 1920 in the Zoological Gardens; and Mr. D. W. Musselwhite has once met with a Goldfinch in Battersea Park.

TWITE (*C. f. flavirostris*).—Mr. E. M. Nicholson saw and heard two which were flying over the Round Pond, Kensington Gardens, on November 21st, 1925 (*Field*, December 3rd, 1925).

LESSER REDPOLL (*C. l. cabaret*).—Passes over the Zoological Gardens in October, and sometimes comes down to aviaries in which there are captive birds (D. Seth-Smith). Small parties have twice been seen in Kensington Park Gardens by Col. R. Meinertzhagen: in October, 1926, and March, 1928. I once saw a Lesser Redpoll which had flown into a house in Phillimore Gardens, Campden Hill, but have never met with the species in Kensington Gardens or Hyde Park, where it has probably been overlooked, for it is often seen at Highgate and Hampstead, where it is said to breed, and in winter frequents Wimbledon and Putney Heath, where also it is known to have bred.

LINNET (*C. c. cannabina*).—An occasional visitor, chiefly in autumn and winter. A pair frequented the framing ground

in Hyde Park during the summers of 1916 and 1918. There is some evidence that they bred there on the latter occasion (J. Rudge Harding, *Selborne Mag.*, XXIX., p. 51).

BULLFINCH (*Pyrrhula p. nesa*).—An occasional visitor. Reported on various occasions from Kensington Gardens and Hyde Park. Mr. D. W. Musselwhite has once seen it in Battersea Park.

CHAFFINCH (*Fringilla c. cælebs*).—To be seen at all seasons, though probably very few birds remain in town throughout the year. There is an influx of Chaffinches in severe weather, but these leave when it becomes milder. Others arrive in spring and stay to nest. Formerly it was rather scarce in the breeding-season. During the last few summers there must have been four or five pairs in Kensington Gardens and about as many in Hyde Park. It breeds in the grounds of Holland House, the Zoological Gardens (D. Seth-Smith), and probably in most of the larger parks.

BRAMBLING (*Fringilla montifringilla*).—A rare visitor. It has been seen in Kensington Gardens on October 23rd, 1908, by myself (*Selborne Mag.*, XX., p. 43), and on April 3rd, 1914, by my sister, Miss F. E. Macpherson (*t.c.*, XXV., p. 31). [This last mentioned bird was very likely the one seen there on the following day by Miss D. Eardley-Beecham (*B.B.*, VII., p. 344), and a few days later in the same month by Mr. J. Rudge Harding (*Selborne Mag.*, XXVI., p. 41).] On January 17th, 1926, four were seen by Mr. F. R. Finch during very cold weather in Cheyne Row and Lordship Place, Chelsea (*Field*, Jan. 28th, 1926).

HOUSE-SPARROW (*Passer d. domesticus*).—A very numerous resident. Can be seen in some of the parks taking bread from the hand. I have seen every imaginable variety in London: the most striking being a cock Sparrow with a bright chestnut throat and breast, and another heavily marked with black on the throat, breast and flanks, very like the Spanish Sparrow.

TREE-SPARROW (*P. m. montanus*).—Col. R. Meinertzhagen, on May 17th, 1928, saw three in Kensington Park Gardens.

The only other Tree-Sparrow I have heard of in Inner London was one seen by the late Mr. Howard Saunders in Kensington Gardens as long ago as 1899.

YELLOW BUNTING (*Emberiza c. citrinella*).—A very rare visitor. On April 24th, 1903, I saw and heard one singing in Hyde Park (*Nature Notes*, XV., p. 88), and Mr. L. Parmenter saw one there on March 28th, 1928.

These are the only two I have heard of in Inner London during the present century, though I have seen it on three occasions prior to 1900.

SKY-LARK (*Alauda a. arvensis*).—Not infrequently seen. Sometimes alights in the parks, but rarely stays long. Flocks of considerable size sometimes pass over London shortly before or during severe weather. In March, 1916, a Sky-Lark took up its abode by the water-works on Campden Hill, and could be heard singing daily. Mr. D. Seth-Smith informs me that in spring it is often heard singing over the Zoological Gardens.

TREE-PIBIT (*Anthus t. trivialis*).—Occasionally seen in spring in Kensington Gardens and Hyde Park. Its visits are rarer than they were. Mr. D. Seth-Smith saw one in April, 1926, in a tree near the Keeper's Lodge, Zoological Gardens. It is most unusual for a Tree-Pipit to sing when on the ground, but I heard one singing from this position on May 10th, 1917, in Kensington Gardens (*Selborne Mag.*, XXIX., p. 16).

MEADOW-PIBIT (*A. pratensis*).—Often seen and at all seasons. It usually occurs singly or in very small parties. The largest gathering I have seen in London was a flock of about thirty.

YELLOW WAGTAIL (*Molacilla f. rayi*).—Occasionally seen in spring in Regent's Park; but very rarely at that season in Kensington Gardens or Hyde Park, though it has been observed there in autumn more than once (L. Parmenter). It is surprising that it has not been noticed more frequently, considering that many pairs breed a short distance outside the western boundary of our area. It has been seen in autumn in St. George's Recreation Ground, Stepney (P. W. Horn).

GREY WAGTAIL (*M. c. cinerea*).—A fairly regular but not numerous visitor from August to February to those parks which have lakes. Major A. H. Daukes tells me that, on November 3rd, and again on December 2nd, 1928, one actually visited his garden at 22, Egerton Terrace, South Kensington. It appears in autumn and spring at the ponds of the Zoological Gardens and on the banks of the Regent's Canal (D. Seth-Smith). One was picked up dead in the grounds of St. George's Recreation Ground, Stepney (P. W. Horn). Seen in winter on the banks of the Thames by Battersea Park and Chelsea (R. W. Hayman).

PIED WAGTAIL (*M. a. yarrellii*).—Frequently seen. It has bred on several occasions in Hyde Park, and has done so at least once in Kensington Gardens. It nested in the Zoological Gardens some years ago (D. Seth-Smith) and is often seen there on the lawns. It has also been noticed in September and October in the St. George's Recreation Ground, Stepney (P. W. Horn).

WHITE WAGTAIL (*M. a. alba*).—On April 30th, 1925, one was seen by Mr. R. W. Hayman on the foreshore of the Thames at Chelsea (*Field*, May 14th, 1925).

TREE-CREEPER (*Certhia f. britannica*).—An occasional visitor, but rarely seen except in Kensington Gardens. Here it has been observed by Miss D. G. Yorke on October 20th and 24th, and November 28th, 1913 (*Selborne Mag.*, XXV., p. 78); by Miss D. Eardley-Beecham on March 25th, 1914 (*B.B.*, VIII., p. 291); by Mr. J. Rudge Harding on April 22nd, 1914 (*Selborne Mag.*, XXVI., p. 41); by the late Mr. Charles Rothschild on December 23rd, 1921 (*Field*, Jan. 14th, 1922); and by Mr. J. B. Watson on January 2nd, 1922 (*t.c.*, Jan. 21st, 1923), and again on December 26th, 1923 (*t.c.*, Jan. 3rd, 1924). On February 7th, 1915, there was one on the trunk of an acacia in my garden on Campden Hill (*Selborne Mag.*, XXVII., p. 67). In the Zoological Gardens Mr. D. Seth-Smith saw one in April, 1926, near the Keeper's Lodge.

NUTHATCH (*Sitta e. affinis*).—One was seen on April 27th, 1911, by Mr. J. Rudge Harding in Kensington Gardens. Mr. D. Seth-Smith saw one on September 17th, 1928, near the south entrance to the Zoological Gardens.

GREAT TITMOUSE (*Parus m. newtoni*).—A fairly common resident; breeds. There appears to be an appreciable influx of Great Tits in autumn.

BLUE TITMOUSE (*P. c. obscurus*).—Resident, and breeds in some numbers. This species, like the last, is most numerous in autumn.

COAL-TITMOUSE (*P. a. britannicus*).—Seen occasionally; but is not nearly so common as the two preceding species.

MARSH-TITMOUSE (*P. p. dresseri*).—Mr. D. W. Musselwhite has seen it once, in Battersea Park in February, 1921.

LONG-TAILED TITMOUSE (*Ægithalos c. roseus*).—There are a few records of the occurrence of this species. On November 14th, 1903, I saw a party of seven or eight in Kensington Gardens (*Nature Notes*, XV., p. 90). Miss W. Austen (now Mrs. Frick) noticed a flock of about thirty in a poplar over her studio in Warwick Avenue, Maida Hill, on October 1st, 1914. They flew to plane trees on the Regent's Canal bank (*Zool.*, 1915, p. 80). Mr. D. Seth-Smith writes that a small party was seen on September 15th, 1928, in the Zoological Gardens. Mr. L. Paimenter tells me that on November 20th, 1928, he came upon a flock of ten in Hyde Park, which flew into the garden of the Ranger's Lodge. Mr. P. W. Horn has once met with a Long-tailed Titmouse in St. George's Recreation Ground, Stepney.

GOLDEN-CRESTED WREN (*Regulus r. anglorum*).—Has been seen on many occasions in Kensington Gardens and sometimes in Hyde Park. Most of the occurrences are in October. I am informed by Mr. D. Seth-Smith that early in the spring of 1910 one was captured, and released, by a keeper at the Zoological Gardens. Mr. P. W. Horn tells me that Goldcrests have been observed on several occasions by different observers in St. George's Recreation Ground, Stepney. On November 5th, 1919, the Rev. P. Clementi-Smith saw a Goldcrest in the small garden of the Rectory of St. Andrew by the Wardrobe in the City (*Times*, Nov. 6th, 1919).

RED-BACKED SHRIKE (*Lanius c. collurio*).—One was seen on August 29th, 1904, by Mr. Charles H. Emson in Hyde Park (*Field*, Sept. 10th, 1904).

SPOTTED FLYCATCHER (*Muscicapa s. striata*).—A few spend the summer and nest in London. One or two pairs breed regularly in Kensington Gardens and Hyde Park. It nests annually in the grounds of Holland House, and rarely in other private west-end gardens. I usually see at least one pair each summer in Regent's Park. I noticed some young birds in July, 1928, in Battersea Park, and on August 15th, 1928, saw a Spotted Flycatcher feeding a fully fledged young one in Victoria Park. Mr. D. Seth-Smith says that it formerly bred in the Zoological Gardens every year, but is less common now, and was not seen there in 1928.

PIED FLYCATCHER (*M. h. hypoleuca*).—One was seen by Mr. E. M. Nicholson in Kensington Gardens on August 26th, 1925 (*Nineteenth Century*, 1925, p. 927). Col. R. Meinertzhagen saw in Kensington Park Gardens a female Pied Flycatcher on April 23rd, and an immature male and female together on May 13th, 1927.

CHIFFCHAFF (*Phylloscopus c. collybita*).—A passage-migrant in small numbers. One or two are heard in spring and in autumn. Both in Hyde Park and in the grounds of Holland House the Chiffchaff has been heard singing throughout the summer, but I have never succeeded in obtaining any evidence of the existence of a nest. One was heard in St. George's Recreation Ground, Stepney, on September 17th, 1919 (P. W. Horn, *London Nat.*, 1919, p. 24).

WILLOW-WARBLER (*Ph. t. trochilus*).—A passage-migrant in considerable numbers, and two or more pairs generally stay and nest in the grounds of Holland House. In 1921 a pair nested in Hyde Park (J. Rudge Harding, *Selborne Mag.*, XXIX., p. 143), and again in 1922 and 1923. It is probable that Willow-Warblers have bred in other places in London.

Many pass through the town towards the end of July and in August, when their weak autumn song is often heard.

WOOD-WARBLER (*Ph. s. sibilatrix*).—Occasionally met with during the spring migration. Its song is now generally heard once or twice each April or May in Kensington Gardens or Hyde Park. Formerly such an occurrence was very rare.

REED-WARBLER (*Acrocephalus s. scirpaceus*).—A spring passage-migrant, but rarely remains with us more than a few hours. There are records of the nesting of this species in London, but they do not relate to the present century.

MARSH-WARBLER (*A. palustris*).—A Marsh-Warbler is reported to have been seen and heard on June 5th 1924, in Kensington Gardens (H. G. Alexander, *B.B.*, XVIII., p. 242).

SEDGE-WARBLER (*A. schænobænus*).—Occasionally met with on spring migration, but rarely stays long. It is sometimes found in unexpected places. On May 16th, 1906, Mr. W. R. Pethen picked up a dead Sedge-Warbler on the roof of the Royal Agricultural Hall, Islington. Major A. H. Daukes informs me that one evening in May, 1928, one sang for an hour or more in his garden in South Kensington.

GARDEN-WARBLER (*Sylvia borin*).—A spring passage-migrant. Occasionally the song is heard unexpectedly during the summer. As late as July 29th, 1915, I found one singing strongly in Kensington Gardens. There is no evidence that it has bred. Its visits have become more frequent in recent years.

BLACKCAP (*S. a. atricapilla*).—A spring visitor in small numbers. Most of them pass through London, but generally two pairs stay and nest in the grounds of Holland House; and it is sometimes met with in other places during the summer under circumstances which suggest that it may have nested. On April 22nd, 1914, a Blackcap was picked up dead in St. Martin's Court, Ludgate Hill (A. A. Goodall, *B.B.*, VIII., p. 15).

WHITETHROAT (*S. c. communis*).—A few pass through London each spring. Sometimes seen in autumn. In the spring of 1924 a pair frequented the Kensington Gardens Sanctuary for some weeks. The male bird was frequently heard singing until the third week in May. There was no proof of the existence of a nest, though it is quite probable that there was one.

LESSER WHITETHROAT (*S. c. curruca*).—A rather scarce spring visitor. Has occasionally bred. I found a nest with four eggs on June 6th, 1915, in the grounds of Holland House (*Selborne Mag.*, XXVII., p. 68), and there was reason to

believe that it bred there again in 1921, in which year it nested in the framing-ground enclosure in Hyde Park. (J. Rudge Harding, *t.c.*, XXIX., p. 143). It has been observed by Mr. P. W. Horn in St. George's Recreation Ground, Stepney.

FIELDFARE (*Turdus pilaris*).—Seen sometimes in autumn and winter, usually in small flocks. Rarely stays more than an hour or two.

MISTLE-THRUSH (*T. v. viscivorus*).—A few pairs are resident, and nest fairly regularly in Kensington Gardens and the grounds of Holland House, and occasionally elsewhere.

SONG-THRUSH (*T. ph. clarkei*).—A fairly common resident. Breeds regularly ; but many of its offspring share the fate of so many young birds in London and fall a prey to cats. Unlike Blackbirds, Thrushes rarely sing from roof-tops, but one did so in Campden Hill Square for some days in 1917.

REDWING (*T. musicus*).—Sometimes heard passing overhead in autumn nights. Many come into the parks and frequent the shrubberies during hard frosts. Large numbers are rarely seen, though Mrs. K. Taylor tells me that on January 31st, 1927, she counted a flock of 150 Redwings in Victoria Park. The weather was severe. They left gradually as the thaw came, but there were still between 30 and 40 of them on February 5th. Flocks have been seen in hard weather in St. George's Recreation Grounds, Stepney, where they have often been picked up dead (P. W. Horn). In the early spring small flocks are sometimes seen to settle on trees and cackle like Starlings. On March 28th, 1917, I heard one sing for a short time in Kensington Gardens (*Selborne Mag.*, XXIX., p. 15).

RING-OUZEL (*T. t. torquatus*).—On April 28th, 1922, Mr. J. Rudge Harding saw a Ring-Ouzel in Kensington Gardens (*Field*, May 13th, 1922).

BLACKBIRD (*T. m. merula*).—A fairly common resident. Breeds regularly. I heard one singing strongly on January 6th, 1903, in Kensington Gardens, and another on January 18th, 1920 on Campden Hill. It generally seems to acquire its song earlier in London than in the surrounding country.

WHEATEAR (*Enanthe æ. ænanthe*).—Seen in small numbers when on passage in spring ; occurs occasionally in autumn. In recent years its appearances have been less regular. On the morning of April 8th, 1902, I saw about 200 in Hyde Park ; they all left during the day. This is the only occasion upon which I have seen more than one or two at a time in London.

GREENLAND WHEATEAR (*E. æ. leucorrhoa*).—A fine male Wheatear, which I watched in Hyde Park on May 26th, 1919, and which flew into an elm, was undoubtedly an example of this race (*Selborne Mag.*, XXIX., p. 66). So also probably was a large bird seen by Miss M. B. H. Deane, which perched on a plane tree near the Albert Memorial, Hyde Park, on April 26th, 1928.]

WHINCHAT (*Saxicola r. rubetra*).—Has been seen on spring migration, but is a very rare visitor. I have only met with two during the last twenty-nine years: one on May 10th, 1900, in Kensington Gardens, and the other on April 27th, 1911, in Hyde Park. Mr. J. Rudge Harding saw three on May 4th, 1908, in the Green Park, close to Constitution Hill.

STONECHAT (*S. t. hibernans*).—One was seen by the late Mr. Harold Russell on February 28th, 1912, by the Round Pond (*Field*, March 2nd, 1912).

REDSTART (*Phœnicurus ph. phœnicurus*).—Formerly this species was seen in London, especially in Kensington Gardens, with the utmost regularity on its spring passage; but for the last fifteen years its visits have become much scarcer. Rarely seen in autumn.

BLACK REDSTART (*Ph. o. gibraltariensis*).—A pair appeared in the precincts of the Natural History Museum, South Kensington, at the end of April, 1927. The female disappeared on May 16th, but the male was subsequently seen at intervals for several months and was finally picked up dead (A. H. Bishop, *B.B.*, XXI., p. 129).

It will be remembered that a Black Redstart frequented the grounds of this Museum for several weeks during the winter 1885-6 (*Zool.*, 1886, p. 74).

NIGHTINGALE (*Luscinia m. megarhyncha*).—A very rare visitor. On May 8th, 1907, I heard a Nightingale singing in a small rhododendron plantation in front of Buckingham Palace (*Nature Notes*, XXIX., p. 142). On May 19th, 1928, Mr. D. Seth-Smith heard one singing in the Zoological Gardens (*Times*, May 24th, 1928).

ROBIN (*Erithacus r. melophilus*).—A common resident. Breeds, but comparatively few of the young reach maturity owing to the depredations of cats.

HEDGE-SPARROW (*Prunella m. occidentalis*).—A fairly common resident. Breeds, but does not increase.

WREN (*Troglodytes t. troglodytes*).—Resident in small numbers, and a few breed. Not so common a resident as formerly, but there appears to be a temporary increase in its numbers in autumn.

SWALLOW (*Hirundo r. rustica*).—A few are seen on arrival.

in spring. They do not, so far as I am aware, remain to breed, though a pair is reported to have nested in 1907 and 1908 in one of the deer sheds in the Zoological Gardens (F. Finn, *Countryside*, October 26th, 1907, and March 6th, 1909). Occasionally an odd bird is seen during the summer, and some are generally observed at migration time in autumn.

It used to nest in the buildings in Battersea Park (*Field*, October 31st, 1896).

MARTIN (*Delichon u. urbica*).—As in the case of the Swallow, some are seen at the time of the spring migration, and again in the autumn. I do not know that any breed within our area, though some do so just outside it.

I remember the time when five or six pairs nested regularly in the Bayswater Road under the eaves of the houses now known as Lancaster Gate Terrace and of The Crown Public House, adjoining the Lancaster Gate Tube Station. They could often be seen picking up mud for their nests from the road. The last year of this colony was 1887. For several subsequent seasons the old nests were tenanted by Sparrows.

SAND-MARTIN (*Riparia r. riparia*).—A few are seen in London at the time of arrival and departure.

SWIFT (*Apus a. apus*).—Prior to 1921 Swifts were occasionally seen during the summer over the water in the parks. In stormy weather they often appeared in small parties, and when the shade temperature exceeded 80° F., one or two were frequently noticed at a considerable height. In 1921, when there was a strike of miners, and little coal was being used, the atmosphere of London was clearer than usual, and a considerable number of Swifts could be seen daily over the Serpentine. Whether, or where, they nested in Inner London, I do not know. A fair number were noticed during the succeeding summers, but they have gradually diminished, and it may be doubted whether they are now more numerous than they were prior to 1921.

NIGHTJAR (*Caprimulgus e. europæus*).—On August 4th, 1908, Mr. J. W. Castle saw a Nightjar hawking over the bushes behind Apsley House, Hyde Park Corner (*Field*, August 15th, 1908). On May 19th, 1921, Mr. F. Russell Roberts saw one flying along the Serpentine near the bridge (*t.c.*, June 4th, 1921). On July 19th, 1922, a Nightjar was seen in the same neighbourhood as the specimen recorded by Mr. Castle (F. Hercy, *t.c.*, August 5th, 1922). A few years ago Mr. F. Finn saw a Nightjar flying across the Marylebone Road.

KINGFISHER (*Alcedo a. ispida*).—An occasional autumn and winter visitor to the water in the parks. It has also been seen by the Regent's Canal (D. Seth-Smith and J. E. S. Dallas).

GREEN WOODPECKER (*Picus v. virescens*).—On June 20th,

1904, Mr. E. G. B. Meade-Waldo saw a Green Woodpecker in St. James's Park (*Field*, July 2nd, 1904).

GREAT SPOTTED WOODPECKER (*Dryobates m. anglicus*).—One or two, perhaps the descendants of those which inhabited Kensington Gardens in Yarrell's day, frequent the grounds of Holland House, and are often seen on trees in that neighbourhood, and occasionally stray into Kensington Gardens or Hyde Park. I examined occupied nests in Holland House grounds in 1922 and 1925 (*London Nat.*, 1924, p. 6, and 1925, p. 11), and the birds have no doubt bred there on other occasions.

LESSER SPOTTED WOODPECKER (*D. m. comminutus*).—An uncommon visitor. I have noticed it on two or three occasions. It was seen in Kensington Gardens on September 26th, 1913, by Mr. J. Rudge Harding (*Selborne Mag.*, XXV., p. 91), and in November, 1913, by Miss D. G. Yorke (*t.c.*, XXV., p. 78). One was heard by the Albert Memorial on April 2nd, 1914, by Mr. J. Rudge Harding (*t.c.*, XXVI., p. 41). One stayed in Kensington Gardens for several days in May, 1917. Mr. D. Seth-Smith has noticed it on two occasions near his house in the Zoological Gardens.

CUCKOO (*Cuculus c. canorus*).—A few are heard or seen each spring and I have occasionally come across a fully grown bird in autumn. Quite young Cuckoos have been seen more than once in the grounds of Holland House. During the summer of 1905, a young Cuckoo is recorded to have been hatched in the nest of a Robin in the garden of a house near the Marylebone Road (A. D. Webster, *Field*, Sept. 30th, 1905). A Cuckoo was heard in 1925 by Mr. W. D. Lang, of the Natural History Museum, calling in Kensington Gardens on July 14th, an unusually late date (*Times*, July 16th, 1925). Mr. Lang heard it again on July 15th.

LITTLE OWL (*Athene n. vidalii*).—Has been noticed on several occasions. On April 22nd, 1922, one was seen sitting on an elm in Kensington Gardens (J. B. Watson, *Field*, May 6th, 1922). Mr. D. W. Musselwhite writes that he saw one in Battersea Park at the end of October, 1923. Another was observed in the grounds of the Natural History Museum, South Kensington, on December 3rd, 1925 (R. W. Hayman, *t.c.*, December 10th, 1925). Early in 1927, a Little Owl was seen perched on a chimney pot near the South-Eastern Hospital, New Cross (W. S. Gilbert, *t.c.*, February 17th, 1927). In September, 1928, Col. R. Meinertzhagen saw one several times in Kensington Park Gardens.

TAWNY OWL (*Strix a. sylvatica*).—Frequently heard in the west and north of London. It attracts a good deal of attention by its hooting, but is not quite so numerous as many

imagine. At least two pairs reside and breed in the grounds of Holland House, and a few nest elsewhere. Mr. D. Seth-Smith considers it common in the neighbourhood of the Zoological Gardens.

BARN-OWL (*Tyto a. alba*).—Occurs occasionally in the west-end parks, but is an uncommon visitor. It has been seen by Mr. D. W. Musselwhite in Battersea Park.

PEREGRINE FALCON (*Falco p. peregrinus*).—Two were seen on February 26th, 1922, flying over the Brompton Road towards the Natural History Museum (Lewis R. W. Loyd, *B.B.*, XV., p. 270). In March, 1922, Dr. P. Manson-Bahr saw a Peregrine flying at a considerable altitude over Portland Place. Mr. Ernest Playford saw a Peregrine from a window in Cursitor Street, Chancery Lane, in the autumn of 1926 (*Field*, September 9th, 1926). The Hon. G. L. Charteris saw one pass over Lord Haig's funeral procession and past St. George's Hospital in February, 1928. Birds believed to be Peregrines, but not clearly identified as such, have been seen on several occasions.

KESTREL (*F. t. tinnunculus*).—Not infrequently noticed. Sometimes takes up its abode on a conspicuous building. In January, 1914, and for several months afterwards a Kestrel was often to be seen in St. James's Park, Hyde Park or Kensington Gardens, where it was probably attracted by the Sparrows. Mr. R. W. Hayman tells me that a pair have haunted the tower of the Imperial Institute for several winters, and were there for a fortnight last summer. Mr. P. W. Horn informs me that five or six years ago a Kestrel frequented Whitechapel Church for two or three days; and he has observed it on St. George's Church, Cable Street, near the London Docks. Early in March, 1924, a pair took possession of the tower of St. Michael's Church, Cornhill, and remained there till July, though they left for three weeks in May while an adjacent building was being demolished (H. D. Carroll, *Times*, July 5th, 1924, and G. H. Pickmore, *t.c.*, July 9th, 1924). I have been unable to procure any evidence that these birds nested.

SPARROW-HAWK (*Accipiter n. nisus*).—An occasional visitor. Its occurrence has been reported from time to time. I have seen three or four in London. One was picked up in Baker Street on November 29th, 1919 (H. B. Tidswell, *B.B.*, XIII., p. 243). In the spring of 1924 a Sparrow-Hawk frequented Kensington Park Gardens for about a month (R. Meinertzhagen.)

COMMON HERON (*Ardea c. cinerea*).—Often visits the Serpentine and sometimes the water in the other parks.

MALLARD (*Anas. p. platyrhyncha*).—A common resident.

Breeds in the parks which possess lakes. The numbers increase in the winter. In Kensington Gardens many, if not the majority, of the nests are in trees, often some distance from the water. It is a common thing to see a young brood containing one or more ducklings almost black, though they generally show the two yellow patches on the rump. Some Wild Duck are considerably darker than others, but these dark nestlings are not confined to the offspring of dark mothers.

Mr. E. C. Stuart Baker writes to me that the Mallard breeds nearly every year at the Surrey Docks. In 1922 there were no less than four nests: "One on a grass covered bank between two ponds; one in between the piles of timber on a bank; one in a disused barge full of old timber; and one on a mooring post, a most extraordinary site. The latter was washed out when an extra tide was let into the docks. The first two hatched out, and three and five ducklings were raised out of nine and ten eggs respectively" . . . "The one in the barge was only found when it had to be taken into work again. The nest and eggs (11) were lifted '*en bloc*' to a patch of long grass close to where the barge had been lying and the duck returned and sat, but the eggs never hatched."

Miss M. G. S. Best tells me she has seen young broods of Mallard in Chelsea Reach, and thinks this species may nest on some grass-land between the Lots Road Power Station and Wandsworth Bridge.

GADWALL (*A. strepera*).—In the winter of 1920-21 a drake Gadwall appeared on the Round Pond, and has been seen there or close by, on the Long Water or Serpentine, every winter since. For the first few winters he hardly ever left the Round Pond, and was rarely to be seen more than a few yards from its western bank. Latterly he has preferred the Long Water with occasional visits to the Serpentine. And, whereas he used to disappear during the summer, he has for the last few seasons remained in town throughout the year. He has often paired with a Wild Duck, and there have probably been offspring. As this is his ninth winter in London he is becoming an old bird. From the first he has been very tame. In the autumn of 1922, Dr. G. C. Low noticed another Gadwall drake with him for a short time (*B.B.*, XVII., p. 193).

TEAL (*A. c. crecca*).—An uncommon visitor. Teal, which from their behaviour are clearly wild, sometimes appear on the Serpentine, but do not stay long. Mr. Hinton, the bird-keeper in St. James's Park, tells me that he has sometimes, though rarely, seen wild Teal on his lake. Mr. R. W. Hayman has seen them on the Thames in hard weather.

WIGEON (*A. penelope*).—An uncommon visitor in hard weather.

COMMON POCHARD (*Nyroca f. ferina*).—A winter visitor. For the last 35 years and more small flocks have occasionally appeared in cold weather and stayed for a few days. Now it comes in larger numbers. On February 4th, 1904, Mr. G. E. Lodge saw a flock of between 40 and 50 on the Serpentine, an unusually large gathering at that date. During the last few winters Pochards have frequented the Round Pond, where they have become remarkably tame. They arrive in autumn and leave in March.

TUFTED DUCK (*N. fuligula*).—Prior to 1900 a rather scarce winter visitor. Its numbers have increased enormously, and it is now not only a very numerous winter visitor, but for some years past a few pairs have remained throughout the summer and bred in the parks which possess lakes. It has also nested on several occasions recently in the garden of Buckingham Palace. Mr. A. K. Collett tells me that about 1912 he saw a Tufted Duck with a brood in Victoria Park; and Mr. C. A. Cresswell saw a brood in Hyde Park before the war, though Tufted Ducks only took to nesting there regularly in 1924. It is rarely that the ducklings are seen in London before July. The numbers which now appear in London in wintry weather are astonishing. Some of them are very tame, and can occasionally be seen taking bread from the hand. At the end of January and beginning of February, 1928, there were over 250 Tufted Ducks on the Serpentine, and at this time there were immense numbers of them on all the other London park lakes. All but a few pairs have left by the end of March.

SCAUP-DUCK (*N. m. marila*).—An uncommon autumn or winter visitor. Two female or young Scaup visited the Round Pond in the autumn of 1923 (W. M. Crook, *B.B.*, XVII., p. 167). These birds were there to my knowledge on October 30th and stayed for at least ten days. I have also seen a female or young Scaup on the Serpentine upon two occasions, on February 14th, 1924, and January 18th, 1928. Dr. G. C. Low saw two Scaup on the Round Pond on July 23rd, 1926 (*Bull.*, *B.O.C.*, XLVII., p. 75). He tells me he also saw a drake Scaup in adult plumage on February 27th, 1928, and a female the next day, both on the Serpentine.

COMMON SCOTER (*Oidemia n. nigra*).—The late Mr. J. H. Gurney saw a female Scoter on the Thames between Lambeth and Vauxhall Bridges on March 2nd, 1912 (*Field*, March 9th, 1912). One was captured alive at Primrose Hill, Regent's Park, on December 29th, 1927 (D. Seth-Smith, *B.B.*, XXI., p. 236.) Two were seen on the Long Water, Kensington Gardens, by Mr. L. Parmenter on April 13th, 1928 (*B.B.*, XXII., p. 24).

[A bird, believed to have been a female of this species, was seen by Mr. A. K. Collett on March 15th, 1912, flying up the Thames and under Westminster Bridge. It was possibly the same bird as had been seen about a fortnight earlier by Mr. Gurney.]

GOOSANDER (*Mergus m. merganser*).—Two Goosanders visited the lake in St. James's Park during the first week of January, 1928; they were seen for about a fortnight. On January 12th, 1928, a Goosander, which was not one of the birds just referred to, was seen on the Serpentine at about 9 a.m., but left before mid-day (*B.B.*, XXI., p. 233).

RED-BREASTED MERGANSER (*M. serrator*).—On February 12th, 1922, an adult male was identified on the Serpentine by Mr. C. A. Cresswell and his brother, the late Col. G. Cresswell, both of whom had field-glasses (*Field*, February 25th, 1922).

SMEW (*M. albellus*).—One was seen on February 7th and 8th, 1928, on the Serpentine (L. Parmenter. *B.B.*, XXI., p. 262).

CORMORANT (*Phalacrocorax c. carbo*).—Visits of this bird are from time to time reported, usually from the Thames.

SHAG (*Ph. a. aristotelis*).—On January 12th, 1926, a Shag was seen sitting all day on the boom moored inside the lock gates of the Wapping Basin, London Docks (T. M. Blagg, *London Nat.*, 1926, p. 63).

GREAT CRESTED GREBE (*Podiceps c. cristatus*).—I had not seen this species in London till November 25th, 1908, when one appeared for a short time on the Serpentine. Since then it has been observed there on many occasions, and has sometimes been seen on the Round Pond and other London waters. Its visits usually take place from October to April, although I have seen it in July.

BLACK-NECKED GREBE (*P. n. nigricollis*).—One was seen by Mr. R. W. Hale on September 8th and 9th, 1926, on the lake in Regent's Park (*London Nat.*, 1926, p. 55).

LITTLE GREBE (*P. r. ruficollis*).—Not infrequently visits the water in the parks; generally in autumn when on migration. It used to breed in St. James's Park, but has not done so since the summer of 1914, after which this lake was drained and kept dry during the war and for some time afterwards. A pair has spent the last few summers on the water in Regent's Park, where, on July 12th, 1928, Mr. L. Parmenter tells me he saw a young bird.

WOOD-PIGEON (*Columba p. palumbus*).—A common resident. Very tame; may often be seen eating out of the hands of visitors in the parks. In 1886, there were, I think, four pairs of Wood-Pigeons in Kensington Gardens, and perhaps as many more in the rest of Inner London. During the next half dozen years their increase was astounding. One evening in

July, 1892, I counted 83, about half of them young birds, on a lawn in St. James's Park. Their tameness increased as rapidly as their numbers. In 1895, I saw a Wood-Pigeon's nest on a tree in the small churchyard of St. Botolph's Church, Aldersgate Street, a few yards from the General Post Office. Similar situations have since been selected on various occasions. In 1897, a pair caused much interest by nesting on the Church of St. Martin-in-the-Fields, Trafalgar Square, and they have nested on other London buildings. But the strangest nesting site ever selected by this species was chosen about fifteen years ago, when a pair built their nest on a girder under the roof of the St. James's Park Station on the Underground Railway. They nested here for several years in succession. I have seen the London Wood-Pigeon sitting on its nest in every month of the year. After the breeding-season many of the birds leave the town, but return in the winter, at which season, and in the early spring, great numbers of additional Wood-Pigeons come into London to roost. By the Long Water in Kensington Gardens, I counted on the evening of February 21st, 1928, over a hundred of these birds roosting on a group of six trees, and many other trees in the neighbourhood were tenanted quite as thickly. The island in the Serpentine is a favourite roosting place with this species, as Dr. G. C. Low has pointed out (*Ibis*, 1923, p. 563, and 1924, p. 590).

STOCK-DOVE (*C. ænas*).—A pair nests in the grounds of Holland House. It is not infrequently seen and heard in Kensington Gardens, but I am not satisfied that it breeds there. A pair used to nest regularly some years ago in one of the elms near the bathing place in Hyde Park. Mr. F. Finn has seen the Stock-Dove twice in recent years in Regent's Park.

TURTLE-DOVE (*Streptopelia t. turtur*).—Very rarely seen. On May 3rd, 1928, I heard and watched one in the grounds of Holland House. Has been seen by Mr. D. W. Musselwhite in Battersea Park.

OYSTER-CATCHER (*Hæmatopus o. ostralegus*).—On February 12th, 1929, Mr. D. W. Musselwhite saw an Oyster-Catcher flying just above the buildings from the direction of Broad Street Station towards Old Broad Street, in the City. It was very cold at the time.

GOLDEN PLOVER (*Charadrius apricarius*).—Has been heard passing over South Kensington by night by Major A. H. Daukes.

LAPWING (*Vanellus vanellus*).—Has been observed on many occasions flying over London, usually during or before the advent of hard weather. Lapwings do not often settle in the parks, but one was seen on the ground by the Round Pond in

Kensington Gardens on November 26th, 1925, by the late Mr. Harold Russell (*Times*, November 27th, 1925); on March 12th, 1928, a flock of 42 were feeding in a snow storm on the cricket ground in Battersea Park (H. A. F. Macgrath, *B.B.*, XXI., p. 285); thirteen were seen by Mr. L. Parmenter on March 13th, 1928, on the ground near the Bird Sanctuary in Hyde Park, and on January 21st, 1929, several Lapwings were seen on the lawn at Kensington Park Gardens (R. Meinertzhagen).

[SANDERLING (*Crocethia alba*).—One said to have been seen by the Serpentine on July 30th, 1900. (M. F. Wykeham-Martin, *Field*, August 11th, 1900).]

DUNLIN (*Calidris alpina*).—Mr. R. W. Hayman tells me that on September 14th, 1926, when he was on one of the towers of the Natural History Museum, South Kensington, a Dunlin flew by at a distance of only a few feet from him. [On July 2nd, 1928, a flock of small waders about 1,000 feet up, having every appearance of being Dunlin, flew south-eastwards over West Eaton Place (W. Cave, *B.B.*, XXII., p. 147).]

COMMON SANDPIPER (*Tringa hypoleucos*).—Observed fairly frequently on spring passage by the water in Kensington Gardens and Hyde and St. James's Parks, and also by the Thames. On April 20th, 1926, one was seen on the towing path of the Regent's Canal (D. Seth-Smith). It is not quite so often noticed in the parks during the autumn migration.

COMMON REDSHANK (*Tringa t. totanus*).—Rarely seen; but probably a good many pass up the Thames Valley unobserved. Has been seen in Hyde Park by me on July 1st, 1921 (*Selborne Mag.*, XXIX., p. 141); and by Mr. L. Parmenter on May 13th, 1927 (*London Nat.*, 1927, p. 30). But the most remarkable occurrence was related to me by Mr. E. G. B. Meade-Waldo, who, on the bitterly cold morning of February 3rd, 1917, saw four Redshanks flying round the courtyard outside Victoria Station. On the evening of November 24th, 1904, I heard some Redshanks calling over the Serpentine (*Nature Notes*, XVI., p. 50). They have been heard by night passing over South Kensington by Major A. H. Daukes, and over Chelsea by Mr. J. Rudge Harding (*Selborne Mag.*, XXIV., p. 117).

BLACK-TAILED GODWIT (*Limosa l. limosa*).—Mr. E. C. Stuart Baker writes to me that in 1917 a party of Black-tailed Godwits visited the Surrey Docks, Rotherhithe. They settled for a few minutes on some mud close to him. He counted seven birds, but they were very restless, and there may have been eight.

COMMON CURLEW (*Numenius a. arquata*).—A flock of Curlew was heard passing over Truman's Brewery, Spitalfields, on the night of July 5th, 1911 (A. Buxton, *Field*, July 15th, 1911). On July 24th, 1926, Mr. D. Gunn wrote to tell me that on that afternoon he had seen a string of Curlew flying towards Putney when he was near Baron's Court Railway Station, West Kensington. Major A. H. Daukes has frequently heard Curlew passing over South Kensington on autumn nights, and Mr. D. Seth-Smith has heard them passing over the Zoological Gardens on still nights in spring.

WHIMBREL (*N. ph. phæopus*).—Heard passing over South Kensington at night on a few occasions by Major A. H. Daukes. My wife and I heard a Whimbrel flying over Campden Hill on the evening of August 16th, 1926 (*London Nat.*, 1926, p. 9).

COMMON SNIPE (*Capella g. gallinago*).—Snipe have occasionally been recorded from the parks, but such occurrences are much rarer than they used to be. The last bird of this species reported to me was seen by the late Mr. George Henderson in 1921, in Kensington Gardens.

JACK SNIPE (*Lymnocryptes minimus*).—Mr. P. W. Horn informs me that a Jack Snipe was picked up dead on the top playground of a school near the Stepney Borough Museum about 25 years ago.

There are two old records of the occurrence of this species in Inner London: in both cases the bird was found dead. One was picked up on October 26th, 1869, by the then Lord Lansdowne on the Horse Guards Parade (J. E. Harting, *Times*, January 15th, 1894), and the other was found in the courtyard of the Bank of England in January, 1894. (T. Digby Pigott, *Times*, January 10th, 1894.)

WOODCOCK (*Scolopax r. rusticola*).—The Woodcock has from time to time been seen in the parks from October to March; but, as in the case of the Snipe, such occurrences are not so frequent now as they used to be. The most recent occurrences were in the garden of the Ranger's Lodge, Hyde Park, where a Woodcock was seen by Captain Sir Bryan Godfrey-Faussett, R.N., on January 5th, 1929, and again on the 11th; and in St. James's Street, where on February 15th, 1929, one flew into the arms of The Hon. Esmond Harmsworth's butler (*Field*, Feb. 21st, 1929).

[COMMON TERN (*Sterna h. hirundo*).—On May 12th, 1906, a hot sultry day, I saw a flock of about twenty Terns flying fairly high over the Serpentine in an easterly direction. I believe they were Common Terns.]

BLACK-HEADED GULL (*Larus r. ridibundus*).—A very common London bird in autumn, winter, and early spring. The species became a common visitor after the great frosts in the early nineties, and, in particular, after the extremely severe

weather of February, 1895, when the Thames was almost entirely blocked with ice, and thousands of people visited the embankment and bridges to look at the river and feed the swarms of hungry Gulls. The birds never forgot the hospitality which they received, and have since appeared in London each autumn in ever increasing numbers. Their tameness has increased with their numbers, and they may often be seen taking fish and bread from the hand. Black-headed Gulls frequent every park where there is water ; but very few spend the night in the parks. Nearly all leave just before sunset and repair to the Thames and the reservoirs in its neighbourhood. They generally depart from London during March, though some immature birds frequent the river throughout the summer. Early in July a few young birds of the year appear by the Thames, though it is very rarely that one of these is seen in the parks until it has effected the change from juvenile to first winter plumage ; a change which, when once commenced, is completed with amazing rapidity, as Mr. D. Gunn has recently demonstrated to me. The habit of occasionally perching on trees appears to be increasing among London Black-headed Gulls.

COMMON GULL (*L. c. canus*).—Prior to the last few years, this species was a fairly frequent winter visitor. There has lately been a striking increase in its numbers, particularly in cold weather, when it mingles with the Black-headed Gulls, but does not yet imitate them in approaching human beings to be fed. One adult bird found dead on the ice of the lake in St. James's Park on February 16th, 1927, had been ringed in Denmark (*B.B.*, XXI., p. 302).

HERRING-GULL (*L. a. argentatus*).—A fairly common winter visitor ; may often be seen on the park waters.

BRITISH LESSER BLACK-BACKED GULL (*L. f. affinis*).—Until recently a rather scarce visitor to the Thames. During the last few years considerable numbers of various ages have invaded the Thames Valley in the early autumn. They were particularly numerous in 1927 (*J. P. Hardiman, London Nat.*, 1927, p. 26). They rarely visit the parks.

GREAT BLACK-BACKED GULL (*L. marinus*).—A somewhat uncommon winter visitor to the Thames. Seven adult Great Black-backed Gulls were observed on the river at Westminster on April 14th, 1924 (*H. A. F. Macgrath, B. B.*, XVIII., p. 30). On January 27th, 1918, I saw an immature bird of this species alight beside a Herring- and some Black-headed Gulls on the top of the Gulls' Aviary at the Zoological Gardens (*Selborne Mag.*, XXIX., p. 48).

GLAUCOUS GULL (*L. hyperboreus*).—On March 20th, 1915, Mr. Clifford Borrer saw a Glaucous Gull resting on the ice in St. James's Park (*B.B.*, VIII., p. 269).

KITTIWAKE GULL (*Rissa t. tridactyla*).—Has become a comparatively rare visitor to the Thames. More than thirty years have elapsed since I noticed it on the Serpentine.

ARCTIC SKUA (*Stercorarius parasiticus*).—On May 16th, 1916, Mr. E. D. Cuming saw an Arctic Skua pass over Hyde Park, low down (*Field*, May 27th, 1916). Mr. E. C. Stuart Baker tells me that an Arctic Skua haunted the Surrey Docks in December, 1920, and again for a couple of days in January, 1921, after very heavy gales.

RAZORBILL (*Alca torda*).—Mr. A. K. Collett writes that he saw a party of five Razorbills on the Thames just above Blackfriars Bridge on November 20th, 1911, after more than a fortnight of wet and stormy weather.

SOUTHERN PUFFIN (*Fratercula a. grabæ*).—An immature Puffin was picked up dead in St. James's Park on October 21st, 1927, after having been seen on the lake there since October 17th.

This was, I believe, the first occurrence of this species in Inner London since May 16th, 1887, when a Puffin flew into No. 45, Brook Street, Grosvenor Square, a house which, curiously enough, had not long before been tenanted by the late Lord Lilford.

LAND-RAIL (*Crex crex*).—On October 6th, 1913, Mr. C. A. Cresswell drew my attention to a dead bird floating on the Serpentine; it proved to be a Land-Rail (*Selborne Mag.*, XXV., p. 50).

MOOR-HEN (*Gallinula c. chloropus*).—Resident, and to be seen in considerable numbers in those parks which possess lakes. It breeds freely.

COOT (*Fulica a. atra*).—Chiefly a winter visitor. In hard weather flocks of a dozen or more often appear on the Serpentine. A few pairs nest on some of the lakes.

COMMON PARTRIDGE (*Perdix p. perdix*).—Major R. Clark, in a communication to *The Field* of February 4th, 1922, stated that he had "a few days ago" picked up a young Partridge, which was very tired, in Kensington Gardens. [According to an Editorial note appended to the above record, a Partridge had been flushed a few years before in Regent's Park by the late T. Maxwell Witham.]

QUAIL (*Coturnix c. coturnix*).—Mr. P. W. Horn writes to me that a Quail, now in the Stepney Borough Museum, was caught in Buxton Street, Mile End, on May 11th, 1915, and was kept alive for some days. According to my information, at this date, when the War was in progress, no live Quails were imported: so this appears to be a genuine occurrence. [Mr. R. W. Pethen had a Quail brought to him in 1906 or 1907, which had been captured alive on the roof of the Royal Agricultural Hall, Islington. It was probably an escaped bird.]

ORNITHOLOGICAL REPORT FROM NORFOLK FOR 1928.

BY

B. B. RIVIERE, F.R.C.S., M.B.O.U.

ONCE again I have to thank a number of correspondents, whose assistance in compiling the following notes on our Norfolk birds for the year 1928 I gratefully acknowledge, whilst for particulars with regard to weather conditions I am indebted to Mr. A. W. Preston.

The opening of the new year saw the break up of the severe frost which prevailed during the last week of the old, and was followed by a period of stormy, but mild weather, with extensive floods along most of the river valleys. The remainder of the winter was unusually open, but spells of frost and snowstorms occurred during the second week in March, and from April 13th to 22nd. The temperature was below the average during May and June, but with the commencement of July began a long spell of warm, dry, sunny weather, which lasted well into October. Severe gales occurred between November 16th and 26th, a velocity of 66 m.p.h. being registered at Gorleston on 16th, 53 m.p.h. on 23rd, and 55 m.p.h. on 25th. The rest of the month was exceptionally mild, and open weather, with very little frost, continued up to the end of the year.

Amongst the more interesting features of the year may be mentioned the nesting of three pairs of Marsh-Harriers, the unusual number of Garganeys which were present during the summer, the attempted nesting of a pair of Whooper Swans, and the occurrence of four Red-breasted Flycatchers in September.

SPRING MIGRATION.

The sudden onset of bitterly cold weather, with N.E. winds, frost, snow and sleet, which occurred between April 13th and April 21st, seemed to put a complete check on the spring migration of our summer visitors. Those species whose arrival had not previously been noted were not recorded until the cold spell was over, whilst those which had already arrived, and particularly the Hirundines, appeared to vanish. Swallows began to arrive on April 7th, on which and each succeeding day up till 13th they were seen by Mr. J. F. Thomas at Hunstanton, coasting down the eastern shore of the Wash. The largest arrival appears to have taken place on April 9th, on which day they were seen by Miss Ferrier coming in from the sea from E. to W. at Hemsby, and their

first appearance was noted at Hickling (Vincent), Saxlingham (B.B.R.) and Stoke (B.B.R.). Between April 13th and 21st there was not, I believe, a Swallow to be seen in Norfolk, but upon the return of warm weather on 22nd the coasting movement at Hunstanton was immediately resumed (Thomas). On 24th and 25th fresh arrivals took place at Saxlingham, and on the latter day numbers had again arrived at Stoke, Caistor, Trowse and Woodbastwick.

First arrivals of other species were noted as follows :—

WHEATEAR.—March 4th, S. Wootton (Tracy); March 18th, Taverham (Lloyd).

STONE-CURLEW.—March 17th, Thetford (Ferrier); March 25th, Taverham (Lloyd).

CHIFFCHAFF.—March 22nd (Ferrier); March 25th, N. Wootton (Tracy).

BLACKCAP.—March 24th, Saxlingham (B.B.R.); April 25th, Saxlingham (B.B.R.); April 28th, S. Wootton (Tracy).

SAND-MARTIN.—March 28th, Taverham (Lloyd); April 9th, Hickling (Vincent).

WILLOW-WREN.—April 5th, Hickling (Vincent); April 9th, Saxlingham (B.B.R.).

SEDGE-WARBLER.—April 8th, Hickling (Vincent); April 25th, Woodbastwick (B.B.R.).

WOOD-WARBLER.—April 26th, S. Wootton (Tracy).

HOUSE-MARTIN.—April 9th, Hemsby (Ferrier); April 28th, Holt, one (B.B.R.); April 29th (Tracy); April 30th, Saxlingham, two (B.B.R.); May 3rd, Saxlingham, fresh arrival (B.B.R.).

YELLOW WAGTAIL.—April 9th, Hickling (Vincent); April 12th, S. Wootton (Tracy); April 14th, Hunstanton (Thomas).

COMMON WHITETHROAT.—April 10th, Hickling (Tracy); April 28th, considerable arrival (B.B.R.).

REDSTART.—April 11th, S. Wootton (Tracy).

CUCKOO.—April 11th, Hargham (Sir H. Beevor); April 10th, Hemsby (Ferrier); April 23rd, Saxlingham (B.B.R.); April 23rd, S. Wootton (Tracy).

TREE-PIPET.—April 12th, S. Wootton (Tracy); April 25th, Saxlingham (B.B.R.).

GRASSHOPPER-WARBLER.—April 24th, S. Wootton (Tracy).

LESSER WHITETHROAT.—April 27th, Saxlingham (B.B.R.).

REED-WARBLER.—April 28th, Blakeney (B.B.R.).

TURTLE-DOVE.—April 28th, Saxlingham (B.B.R.); May 2nd, S. Wootton (Tracy).

GARDEN-WARBLER.—April 30th, S. Wootton (Tracy).

SPOTTED FLYCATCHER.—May 4th, Saxlingham (B.B.R.).

At the Lynn Well light-vessel at the mouth of the Wash, Redwings, Fieldfares, Blackbirds, Starlings and Sky-Larks were noticed travelling north on many days during February and March, whilst on each day between March 18th and 24th large flocks of Rooks and Hooded Crows were passing from north to south (W. S. Sharman). These last were evidently bound for the Suffolk coast, which is a favourite jumping-off place for the return journey across the North Sea, and a

passage of these two species along the Norfolk coast to the S.E. is of regular occurrence every March.

At the E. Dudgeon light vessel, some thirty miles off the north Norfolk coast, on twelve days during March, Chaffinches, Linnets, and other "Finches," Starlings, Sky Larks, Pipits, Lapwings and Waders were observed travelling to the W., W.S.W. and S.W., while on March 24th a return passage of Rooks was noticed flying from W.N.W. to E.S.E. (S. G. Sharman). The trend to the south in the direction of flight of the former migrants is curious at this time of year, but was also noticed at the same station during February and March, 1927.

AUTUMN MIGRATION.

The first indication of the commencement of the great autumnal migratory movement was the arrival of Wheatears, Willow-Wrens and other Warblers at the E. Dudgeon light-vessel on the night of August 11th (S. G. Sharman). These species again occurred at this lightship on August 12th and 17th, and, with the addition of Redstarts, on the 26th and 29th. The same species, with Common Wrens and Goldcrests, were noted on September 3rd and 13th, and with the addition of Chaffinches on the 19th and 20th; whilst Wagtails were passing by day on August 23rd and September 6th, 10th, 26th and 28th. Where the direction of flight of these birds could be determined, it appeared to be to the S.S.W., S. and S.S.E. (S. G. Sharman). At the Lynn Well light-vessel Waders were passing from N. to S., and N.E. to S.W., on August 22nd, and the first Wheatears and Warblers appeared on August 23rd and 24th. On September 11th, 12th and 13th, Finches and Swallows were noted flying from N. to S., N.E. to S.W. and E. to W., and on 19th a host of Wheatears and Warblers were around the lantern at night (W. S. Sharman).

The first Starlings, travelling as usual from E. to W., were seen at the Lynn Well on October 2nd and at the E. Dudgeon on October 5th.

On the coast-line an arrival of Pied Flycatchers, Redstarts, Willow-Wrens, Wheatears, Meadow-Pipits and Pied Wagtails was noted by Col. Payn at Cley at the end of the first week of September; an immigration of Wheatears, Whinchats and Meadow-Pipits, the latter of which were seen coming in from the sea, was in evidence at N. Runton between September 7th and 10th, and a fresh arrival of Wheatears and Redstarts was observed at the same place between September 15th and 17th (M. D. Brindley). On October 2nd a great passage of

Lapwings from E. to W., which lasted almost throughout the day, was simultaneously observed at the Lynn Well light-vessel (Sharman), at Mundesley (Miss A. Johnson) and at Salthouse (Bishop). The first Pink-footed Geese appeared on September 17th; the first Snow-Buntings were seen on September 28th, and the first Woodcock—a very early one—was shot in the sandhills at Blakeney Point on September 29th (L. Lloyd). The last great migratory “rush” of the year was recorded from the E. Dudgeon light-vessel on the night of December 10th, the last of three days of severe frost, the “pick up” next morning including Starlings, Sky-Larks, Blackbirds, Song-Thrushes, Mistle-Thrushes, Knots, Snipe, and one Woodcock (S. G. Sharman).

Woodcocks were rather scarce during the early part of the season, and this was generally attributed to the tremendous gales which occurred between November 16th and 26th. Rumours were current in Norfolk and elsewhere of numbers of drowned Woodcock being met with in the North Sea during this period, and “Cheviot” of *The Field* (January 24th, 1929) writes of a passenger on a steamer running from Norway to Hull having described to a friend “passing through thousands of drowned Woodcocks.” Such an occurrence is, to say the least of it, difficult to believe, and the evidence is at second-hand, which is the nearest to all such reports it seems possible to attain. Certainly not a single drowned Woodcock was reported as having been washed up on the Norfolk coast, where the evidence seems rather to point to the normal migration having merely been delayed. From mid-December onwards the number of Woodcocks met with was certainly up to, if not above, the average, and amongst some good days reported to the writer may be mentioned thirty-three killed at Melton Constable, twenty at Houghton, seventeen at Woodbastwick, and thirteen at Hempstead.

CLASSIFIED NOTES.

MAGPIE (*Pica p. pica*).—For the third year in succession a pair of Magpies reared a brood at Hickling. Though a few Magpies still manage to elude the gamekeepers in west Norfolk, this is, so far as I am aware, the only pair which now nests in the eastern division of the county.

BLUE-HEADED WAGTAIL (*Motacilla f. flava*).—A pair, evidently just arrived, and which were in company with about a dozen Yellow Wagtails and one White Wagtail, were seen by me at Cley on April 28th. A male was also seen by Miss M. Barclay at Felbrigg Ponds on September 4th.

RED-BREASTED FLYCATCHER (*Muscicapa p. parva*).—No less than four Red-breasted Flycatchers were reported during September. The first was obtained on Cley beach on September 15th (E. C. Arnold,

antea, p. 141). Another was seen by Major Daukes on the watcher's hut at Salthouse on September 16th. A third was seen by A. B. Carter on Cley beach on September 22nd, and on September 30th one was picked up under the window of the lifeboat house at Blakeney Point, against which it had evidently flown (L. Lloyd). The two birds killed were in first winter plumage, the last one proving on dissection to be a male. The number of this species which have now been obtained in Norfolk is seventeen.

BLACKCAP (*Sylvia a. atricapilla*).—A remarkably early male Blackcap appeared in my garden at Saxlingham on March 24th and was again seen on the following day, after which it disappeared. It was not once heard to sing, though it appeared to be in good condition.

DARTFORD WARBLER (*Sylvia u. dartfordiensis*).—On January 9th one was seen at close quarters by Col. W. A. Payn in a patch of gorse on a golf course by the sea. Although it has nested in Suffolk, the Dartford Warbler has very rarely occurred on the Norfolk side of the border. Two specimens have been killed on Yarmouth Denes, the last on February 25th, 1859, and the only other which has been recorded is one in Lord Leicester's collection which was shot on the sea-bank at Wells on December 15th, 1905.

RING-OUZEL (*Turdus l. torquatus*).—An unusually early Ring-Ouzel was seen near Acle by Mr. A. H. Patterson on February 4th.

REDSTART (*Phœnicurus ph. phœnicurus*).—Four pairs of Redstarts bred at Kelling this year (A. P. Meiklejohn). These were the only nesting pairs reported from the north-east of the county, where this species is still very rare.

BLUETHROAT (*Luscinia s. gaelkei*).—The only Bluethroat recorded for the year was an immature female on Cley beach on September 15th (W. A. Payn).

HOOPOE (*Upupa e. epops*).—Two Hoopoes were seen on Blakeney golf course on April 15th (Capt. Barker).

SHORT-EARED OWL (*Asio f. flammeus*).—One pair at least nested in the Broads district (J. Vincent) and another pair at Scolt Head. These last again proved very destructive to the Common Terns, upon which the young Owls appeared to be fed almost exclusively, the old birds raiding the colony regularly every evening (S. H. Long).

MARSH-HARRIER (*Circus æ. æruginosus*).—This proved a record season for Marsh-Harriers. Three pairs successfully nested in the county, and in view of the fact that nowhere else in Great Britain does this bird now breed, this record is one of which those responsible for their protection in Norfolk may well be proud. The earliest nest, containing five eggs, hatched on May 31st; the second, which had a clutch of four, hatched on June 2nd, whilst the third nest contained four small nestlings on June 19th. From these three nests eight young ones were in all successfully reared. The extremely sporting action of Major E. C. Morel in giving his keepers orders to protect one of these pairs of birds which nested on his estate, and in allowing them to rear their young in close proximity to where he was at the same time rearing his young Pheasants, is greatly appreciated by all Norfolk naturalists. Remains of food sent to me from this nest by Miss Ferrier consisted entirely of Water-hens, and these also formed the bulk of the food upon which the young were fed at another nest which was under observation by Mr. J. Vincent. It is to be hoped, therefore, that Major Morel's hospitality was not greatly abused and that his young Pheasants did not suffer unduly.

MONTAGU'S HARRIER (*Circus pygargus*).—Two pairs for certain, and possibly three, nested during 1928.

OSPREY (*Pandion h. haliæetus*).—One was seen at Hickling early in May (J. Vincent).

SPOONBILL (*Platalea l. leucorodia*).—One arrived on Cley Marsh on March 31st but left the following day (Bishop). Another appeared at Hickling about the middle of April and stayed until May 1st (J. Vincent). Two visited Breydon on May 6th and remained until May 14th (Betts).

LITTLE BITTERN (*Ixobrychus m. minutus*).—One was seen by a pond at Wroxham on May 10th by Major S. Trafford, who managed to flush it no less than three times.

COMMON BITTERN (*Botaurus s. stellaris*).—The Bittern appears to be gradually extending its breeding area, and at the same time its numbers in localities already tenanted continue to be well maintained. This year, for the first time, one was heard booming throughout the breeding-season on a marsh in the valley of the Yare, within five or six miles of Norwich (G. E. Fiske).

WHOOPEE SWAN (*Cygnus cygnus*).—One of the most remarkable incidents of the year was the attempt made by a pair of Whoopers to nest on a small mere on the Merton estate. About the middle of March one of the Merton keepers noticed a pair of Swans taking material to a nest at the foot of a willow tree growing in the middle of a small pond, but thinking they were tame Swans from a neighbouring mere thought no more of the matter. Early in April one of the Swans left, the other remaining on the pond, and, when disturbed, flying to a larger piece of water near by. About the end of the month this bird was seen by Mr. H. Wormald, who at once recognized it as a Whooper, and noticed that it appeared to have an injured leg. A few days later, and again on May 6th, it was seen on the same pond by Dr. S. H. Long. It left about the middle of May, but a Whooper, which was in all probability the same bird, was seen by Mr. A. Boyd on a neighbouring mere in the first week of June. The nest was examined on May 17th and found to be empty. It was built of decayed rushes and water-weeds, and stood about two feet above the level of the water.

GARGANEY (*Anas querquedula*).—The year 1928 proved an exceptionally good one for Garganeys, some eight pairs nesting in the Hickling and Horsey area (J. Vincent) and four or five pairs at Ranworth (H. J. Cator), whilst a nest was, for the first time, found at Cley. This last was unfortunately deserted after four eggs had been laid, but on these being placed under a hen by Mr. Colin McLean three ducklings were successfully hatched. At one well-known duck shoot eighteen Garganeys were killed during the month of August—a regrettable fact, but one which can only be avoided by the opening of the duck-shooting season being postponed until September 1st.

COMMON POCHARD (*Nyroca f. ferina*).—As a nesting species the Pochard has always been confined to the neighbourhood of the meres in the south-west of the county, and the only known instance of its breeding on the north-east side was in 1923 and 1924, when two pairs nested on Cley Marsh. In the summer of 1928 several pairs for the first time remained on Hickling Broad. One nest was found, which contained seven eggs on May 24th, and from which five ducklings were eventually hatched, whilst a second pair almost certainly also nested.

PAGET'S POCHARD.—A specimen of this hybrid between the Common Pochard and the White-eyed Pochard (*Nyroca n. nyroca*) was shot at Hickling on November 3rd, 1928. This makes the sixth which has been obtained in Norfolk, four of which, including the above and the first known example, shot on Rollesby Broad on February 27th, 1845,

are now in the Norwich Museum. All those obtained have been drakes, and all are almost exactly similar in plumage.

SLAVONIAN GREBE (*Podiceps auritus*).—One was seen on Hickling Broad on April 7th (J. Vincent).

BLACK-NECKED GREBE (*Podiceps n. nigricollis*).—One was shot at Blakeney on January 17th (F. E. Gunn), and a pair were seen on Langmere on July 19th and on September 6th (Miss M. Barclay).

RUFF (*Philomachus pugnax*).—A considerable number of Ruffs and Reeves, as usual, passed through the county during the spring migration. A remarkably beautiful black Ruff and one Reeve remained at Hickling throughout the first half of May, and hopes ran high that the pair would nest. A second black-ruffed male joined these on May 15th, when a good deal of displaying and fighting between the two Ruffs took place, and all three disappeared a few days later (J. Vincent).

BLACK TERN (*Chlidonias n. niger*).—Unusual numbers of Black Terns passed through during the spring migration, many remaining so late in the season as to raise hopes that this year, at least, a pair or two might stay and breed. They began to arrive during the last few days of April, when some were seen at one of the west Norfolk meres by Mr. H. Halls. On April 30th three were seen on Surlingham Broad (F. E. Gunn). Between May 1st and May 5th many were hawking over the river Wensum between Bintree and Billingham (Sir Bartle Frere). On May 4th seventeen were seen at Cley Marsh (Bishop), and on May 8th six at Ranworth Broad (H. J. Cator). On May 30th ten visited Hickling Broad, one was seen at Hickling on June 2nd (J. Vincent), and the last one at Waxham on June 24th (Miss V. Peel).

SANDWICH TERN (*Sterna s. sandvicensis*).—Blakeney Point was again the colony most favoured by the Sandwich Terns, the numbers nesting there this year being estimated at 1,000 pairs. In the colony further to the east only some fifty or sixty pairs appear to have bred, whilst at Scolt Head no more than five or six nests were found, only one of which hatched. The recovery of three Sandwich Terns ringed as nestlings at Blakeney Point this year by Mr. A. H. Boyd revealed the interesting fact that all had wandered a considerable distance to the north before starting on the southward journey to their winter quarters. One was reported on September 2nd from near E. Hartlepool, Durham, the second from Eggie, Aberdeen, on August 8th, and the third from Alnmouth, Northumberland, on August 24th (*antea*, p. 187). The only other Norfolk Sandwich Tern which has been reported was a bird ringed by Miss Turner as a nestling at Scolt Head on June 17th, 1925, which was recovered at Esmoriz, near Oporto, Portugal, on October 5th, 1927 (*antea*, Vol. XXI., p. 300).

ROSEATE TERN (*Sterna d. dougallii*).—A pair of Roseate Terns again nested in one of the Tern colonies, and two young were successfully reared. The first egg was laid on May 19th.

BLACK-HEADED GULL (*Larus r. ridibundus*).—An adult picked up dead on Cley Marsh in June was found to have a ring which was placed on it as a nestling at Scolt Head on June 12th, 1925 (*antea*, p. 187).

HERRING-GULL (*Larus a. argentatus*).—A Herring-Gull in juvenile plumage was shot at Blakeney on September 5th, bearing the ring: "Museum Nat. Hist., Leiden, Holland, 61042" (F. E. Gunn). I learn from Prof. Van Oort of the Rijks Museum, Leiden, that this bird was ringed as a nestling at Bergen, Holland, on July 22nd, 1928 (*antea*, p. 200).

ICELAND GULL (*Larus leucopterus*).—The identity of some all-white Gulls which were present in the county during May and the early part

of June proved somewhat difficult to establish, though from the weight of evidence I have little doubt they were of the above species and not Glaucous Gulls.

The first was seen on Breydon on May 7th by Mr. Patterson, but at such long range that its identification was impossible. A few days later one was seen by Miss Turner at Waxham, and this bird, being in company with both Greater Black-backed and Herring-Gulls, Miss Turner was able from a comparison in size to identify as an Iceland Gull. On May 24th Messrs. W. G. Alexander, J. Vincent and the writer watched one from a distance of about thirty yards resting on a marsh at Hickling. This was an immature bird, probably in second or third summer plumage, being all white, faintly freckled and barred with pale creamy-brown. It was entirely alone, and having no other bird with which to compare it for size, even at such short range all three observers had to admit the difficulty in deciding whether it was a Glaucous or an Iceland Gull. The following day (May 25th) two similar birds were again seen by Mr. Patterson on Breydon, whilst early in June one was again seen by J. Vincent at Hickling. Upon this occasion it was in company with two Herring-Gulls, which it appeared to resemble exactly in size, and Vincent has no doubt that this bird in any case was an Iceland Gull.

LITTLE AUK (*Alle alle*).—On November 26th, after ten days of almost incessant westerly and north-westerly gales, fifty-two Little Auks were counted by Miss J. Ferrier flying north up the coast-line past Hemsby (*antea*, p. 193), whilst one was picked up alive the same day at Ormsby (A. H. Patterson). Numbers were also seen at sea from the E. Dudgeon light-vessel on November 25th, 26th and 27th (S. G. Sharman).

SPOTTED CRAKE (*Porzana porzana*).—No nest of the Spotted Crake has, so far as I know, been reported in Norfolk since 1890, though a few birds occur from time to time during the spring and autumn migrations. Mr. J. Vincent flushed one this year on a marsh at Hickling on August 3rd, and again on August 22nd and 23rd, and on December 12th one was picked up dead at high-water mark on Palling beach (A. H. Patterson).

QUAIL (*Coturnix c. coturnix*).—Several Quails were reported during the year, though no evidence of their having nested in the county has been forthcoming since 1923. A female which had killed itself against telegraph wires was brought to Mr. Patterson at Yarmouth on June 11th. Three were flushed and one killed near Thetford on September 19th (*Field*, September 27th, 1928, p. 587), and towards the end of October one was shot and another seen at Brancaster (B. K. Wilson).

THE " BRITISH BIRDS " MARKING SCHEME.*

PROGRESS FOR 1928.

BY

H. F. WITHERBY.

THE number of birds ringed in 1928 was most satisfactory and constituted a record, beating our previous highest total by a thousand, as will be seen by the following totals :—

NUMBER OF BIRDS RINGED.

In 1928		...	...	24,479	
In 1909	..	2,171	In 1918	..	5,937
„ 1910	..	7,910	„ 1919	..	3,578
„ 1911	..	10,416	„ 1920	..	5,276
„ 1912	..	11,483	„ 1921	..	8,997
„ 1913	..	14,843	„ 1922	..	9,289
„ 1914	..	13,024	„ 1923	..	12,866
„ 1915	..	7,767	„ 1924	..	18,189
„ 1916	..	7,107	„ 1925	..	18,233
„ 1917	..	6,926	„ 1926	..	23,432
			„ 1927	..	21,625
Grand Total		..	..	233,548	

The total number of ringers has also increased very satisfactorily and several of the new ringers figure high in the list which follows. The four leading ringers are the same as last year, but Dr. Moon has comfortably achieved a record with the extraordinary total of four thousand three hundred and seventy-four. The largest numbers ringed in Dr. Moon's total of forty-seven species make remarkable reading, viz., Song-Thrush (1013), Blackbird (569), Lapwing (489), Willow-Warbler (450), Pied Wagtail (187), Robin (177), Tree-Pipit (153), Starling (137), Chaffinch (118) and Greenfinch (113). Mr. Boyd, whose large total of two thousand and fifty-six is

* For previous Reports see Vol. III., pp. 179-182, for 1909; Vol. IV., pp. 204-207, for 1910; Vol. V., pp. 158-162, for 1911; Vol. VI., pp. 177-183, for 1912; Vol. VII., pp. 190-195, for 1913; Vol. VIII., pp. 161-168, for 1914; Vol. IX., pp. 222-229, for 1915; Vol. X., pp. 150-156, for 1916; Vol. XI., pp. 272-276, for 1917; Vol. XIII., pp. 96-100, for 1918; Vol. XIII., pp. 237-240, for 1919; Vol. XIV., pp. 203-207, for 1920; Vol. XV., pp. 232-238, for 1921; Vol. XVI., pp. 277-281, for 1922; Vol. XVII., pp. 231-235, for 1923; Vol. XVIII., pp. 260-265, for 1924; Vol. XIX., pp. 275-280, for 1925; Vol. XX., pp. 236-241, for 1926; Vol. XXI., pp. 212-219.

also an increase over last year, and comes second, has ringed fifty-seven species. Sandwich Terns (612) and Swallow (297) account for nearly half the total, and amongst the other species Tree-Sparrow (91), Stone-Curlew (7) and Marsh-Harrier (8) may be mentioned. Mr. Mayall's total of fifteen hundred and nine includes thirty-nine species, of which the largest number are Swallow (325), Martin (229), Song-Thrush (242) and Blackbird (153). Lord Scone, who again comes fourth with a total of thirteen hundred and twelve, has ringed forty-six species, of which Woodcock (279), as in the previous year, make the largest number, while Lapwing (149), Mallard (111), Song-Thrush (133) and Starling (104) are notable. The London Natural History Society this year come next with a total of eleven hundred and eighty-eight, made up of no less than sixty species, of which Swallow (196), Song-Thrush (172) and Blackbird (147) are the largest numbers. Col. Pollitt's list of one thousand and twenty-one individuals of forty-five species contains the notable entry of Heron (165), which alone represents great labour. As will be seen by the list, many of the ringers have reached most excellent totals and the numbers ringed of a good many species have been exceptionally large.

It will be noticed that a large number of Herons has been ringed and this should prove interesting in connexion with our census. Not many of these have as yet been recovered, except from the Aldershaw heronry, whence, out of less than forty ringed by Mr. D. D. Godfrey, six have already been reported—two from Belgium, three from France and one from Spain.

A large number of Woodcock have been ringed during the last two years and it is hoped that these will give interesting results. It may be mentioned that Dr. Landsborough Thomson has prepared an article on British ringing results, which we hope to publish shortly.

Among recoveries of interest which may be mentioned here are some further records of Teal found in summer in countries north-east of where they were reared. A Gannet ringed by Mr. H. W. Robinson on the Bass Rock in 1926 reported from the Faeroes in June, 1928. Several Sandwich Terns ringed by Mr. A. W. Boyd in Norfolk reported in Durham, Northumberland and Aberdeen in August and September of the same year. A Cormorant found in the same district as that in which it was ringed as a nestling fourteen years before. A Pied Wagtail ringed by Dr. Moon in Westmorland as a young bird, in June, 1928, was reported, in February, 1929, in

Morbihan, France. I have also just heard that a Swallow with one of our rings has been found in Natal, but the correct number and other details are not yet to hand. This is our eighth Swallow to be reported from South Africa (see Vol. XVI., pp. 81-83, and p. 284), while another was reported from the Congo (Vol. XVII., p. 60). A number of interesting records have also been reported during the year of birds ringed abroad and recovered here.

I should like to draw attention to the experiments made by the Oxford Ornithological Society in connexion with the homing powers of Greenfinches (Vol. XXI., p.p. 292-3), the results of which are sufficient to show that such experiments in this and other birds are well worth pursuing.

NUMBER OF BIRDS "RINGED."

DR. H. J. MOON (4374), Messrs. A. W. Boyd (2056), A. Mayall (1509), Lord Scone (1312), Lon. Nat. Hist. Soc. (1188), Lt.-Col. G. P. Pollitt (1021), Messrs. H. W. Robinson (823), W. and A. B. Duncan (750), R. H. Brown (745), St. Edmund's School Nat. Hist. Soc. (727), Messrs. P. E. A. Morshead (654), K. W. Parkinson (618), Oxford Orn. Soc. (618), Mr. and Mrs. R. O. Blyth (547), Mr. R. M. Garnett (485), Perth's Nat. Hist. Soc. (414), Mr. J. Bartholomew (365), Dr. J. N. D. Smith (313), Messrs. P. K. Chance (312), T. L. Smith (300), Miss E. C. Sharp (267), Dr. F. A. Craine (260), Messrs. T. K. Craven (253), W. D. Shaw (245), J. R. B. Masefield (241), J. F. Thomas (236), E. Cohen (218), Miss F. K. Staunton (193), Messrs. W. A. Cadman (193), J. N. Fletcher (180), R. Howarth (174), Mrs. T. E. Hodgkin (163), Messrs. R. J. and C. R. Stonor (149), Rev. E. Peake (131), Sir S. Bilsland (127), Messrs. H. V. Bamford (125), H. S. Greg (120), J. D'eath (113), W. A. S. Lewis (101), Clifton College Scientific Soc. (100), Mr. W. R. Philipson (100), Major M. Portal (99), Messrs. D. D. Godfrey (80), J. French (76), E. P. Chance (74), Dr. D. F. Jopson (66), Mrs. L. E. and Mr. W. P. G. Taylor (65), Capt. H. A. Gilbert (63), Miss Macmillan (61), Messrs. J. Knox (61), A. P. Meiklejohn (59), Miss L. W. Streatfield (56), Major W. M. Congreve (54), Messrs. H. C. R. Gillman (52), J. Cunningham (48), A. G. Haworth (45), C. F. Archibald (41), R. Carlyon-Britton (41), Sherborne School (32), Messrs. D. J. Robertson (32), L. E. Hope (31), J. F. Wynne (30), T. Kerr (30), J. F. Stephens (28), Col. A. Porritt (28), Messrs. A. C. Smith (27), J. F. Mitchell (25), G. H. Franklin (24), P. B. Lowe (23), Miss I. Mayne (22), Miss M. Heysham (20), Mr. R. H. Hellyar (20), and others who have ringed under twenty each.

NUMBERS OF EACH SPECIES "RINGED."

	'09-'21	'22	'23	'24	'25	'26	'27	'28	Total
*Crow, Carrion ..	38	11	18	59	37	41	46	32	282
Rook ..	268	6	94	24	166	175	253	212	1198
Jackdaw ..	212	20	18	36	43	193	234	124	880
*Magpie ..	26	6	—	33	28	45	14	26	178
Jay ..	43	7	6	20	24	29	25	28	182
Starling ..	7598	454	736	738	866	1967	1324	1579	15262
Greenfinch ..	3359	386	352	484	478	724	680	710	7173
*Goldfinch ..	30	12	10	19	5	6	1	20	103
Twite ..	46	—	1	16	—	—	5	4	72
Redpoll, Lesser ..	144	17	12	1	27	15	26	13	255
Linnet ..	1695	377	575	435	560	489	292	304	4727
Bullfinch ..	287	23	63	62	55	94	38	30	652
Chaffinch ..	3747	618	635	764	672	930	673	858	8897
Sparrow, House ..	467	1	2	15	1	3	2	19	510
Sparrow, Tree ..	273	40	32	70	45	58	79	111	708
Bunting, Yellow ..	606	101	144	143	227	286	188	183	1878
Bunting, Reed ..	458	54	39	27	57	33	64	121	853
Lark, Sky ..	1882	64	61	114	44	100	118	102	2485
Pipit, Tree ..	279	42	57	72	60	176	98	200	984
Pipit, Meadow ..	1421	62	61	114	82	102	112	120	2074
Wagtail, Yellow ..	137	19	20	14	44	53	15	33	335
Wagtail, Grey ..	125	25	37	34	58	22	63	49	413
Wagtail, Pied ..	891	112	136	243	252	124	247	333	2338
*Creeper, Tree ..	36	13	11	4	31	44	16	33	188
Tit, Great ..	830	18	23	20	37	16	32	62	1038
Tit, Blue ..	681	32	11	33	33	53	33	80	956
Tit, Coal ..	106	—	1	2	—	—	7	2	118
Tit, Long-tailed ..	41	—	5	1	—	2	2	1	52
Wren, G.-crested ..	43	—	7	22	47	39	21	9	188
Shrike, R.-backed ..	201	11	19	33	43	49	90	46	492
Flycatcher, S. ..	1066	72	126	208	215	207	181	259	2334
*Flycatcher, Pied ..	49	13	1	14	63	72	127	47	386
Chiffchaff ..	157	25	22	50	42	79	15	60	450
Warbler, Willow ..	2362	274	402	436	454	742	573	1165	6408
Warbler, Wood ..	203	59	80	86	77	142	71	95	813
Warbler, Reed ..	322	21	23	8	25	17	30	66	512
Warbler, Sedge ..	384	50	57	45	16	20	26	49	647
Warbler, Garden ..	236	42	56	100	52	73	21	44	624
Blackcap ..	167	37	26	25	28	62	2	31	378
Whitethroat ..	766	133	177	138	245	589	138	169	2355
Whitethroat, L. ..	192	19	33	18	12	27	23	8	332
Fieldfare ..	85	—	—	—	—	1	—	1	87
Thrush, Mistle ..	738	103	171	139	185	127	159	234	1856
Thrush, Song ..	11381	1052	1702	2660	2882	3027	3200	3265	29169
Redwing ..	45	—	—	1	—	1	—	1	48
Ouzel, Ring ..	87	5	26	7	59	32	49	22	287
Blackbird ..	6980	920	1334	1985	1794	2158	2252	2391	19814
Wheatear ..	278	155	83	97	103	121	108	44	989
Whinchat ..	483	30	69	49	40	145	97	93	1006
Stonechat ..	141	25	56	27	66	33	52	43	443
Redstart ..	371	76	102	58	134	163	63	91	1058
Nightingale ..	89	20	19	18	23	33	40	37	279
Redbreast ..	3623	507	865	753	844	735	746	956	9029

	'09-'21	'22	'23	'24	'25	'26	'27	'28	Total
Sparrow, Hedge ..	2316	221	409	463	487	462	492	538	5388
Wren ..	1079	133	321	331	343	213	212	226	2858
Dipper ..	170	8	19	55	48	55	76	100	531
Swallow ..	7979	821	889	1055	1173	1328	1378	1802	16425
Martin ..	2015	245	296	900	959	849	517	647	6428
Martin, Sand ..	835	18	159	234	271	743	300	195	2755
*Swift ..	33	72	37	87	57	59	51	32	428
Nightjar ..	62	5	10	7	4	7	1	6	102
Wryneck ..	220	8	2	20	13	28	12	10	313
Cuckoo ..	144	16	22	20	23	30	32	32	319
*Owl, Little ..	22	6	11	26	38	30	31	39	203
Owl, Long-eared ..	42	12	7	—	12	3	8	11	95
Owl, Barn..	95	2	13	5	15	19	10	13	172
Owl, Tawny ..	140	14	14	18	52	35	47	53	373
*Merlin ..	17	6	4	9	22	25	13	23	119
Kestrel ..	71	3	20	28	63	93	48	49	375
*Buzzard ..	13	3	2	8	12	6	11	27	82
Hawk, Sparrow ..	71	9	19	21	26	19	17	23	205
Heron, Common ..	111	6	14	21	38	19	97	346	652
Sheld-Duck ..	72	—	4	—	6	1	4	17	104
Mallard ..	686	58	180	281	127	477	588	311	2708
Teal ..	149	1	—	135	148	313	38	26	810
Wigeon ..	103	15	—	3	1	—	14	13	149
Duck, Tufted ..	65	4	1	—	—	—	—	—	70
Cormorant ..	563	—	—	8	—	23	2	38	634
Shag ..	166	—	46	20	5	81	276	74	668
Gannet ..	198	26	119	425	—	100	100	97	1065
Shearwater, Manx ..	72	—	9	13	3	2	32	5	136
Wood-Pigeon ..	245	26	61	181	184	202	168	142	1209
Dove, Stock ..	83	7	15	19	16	35	16	38	229
Dove, Turtle ..	90	12	13	19	35	84	57	23	333
Oystercatcher ..	109	7	20	70	41	61	79	45	432
Plover, Ringed ..	201	19	47	75	39	22	16	42	461
Plover, Golden ..	53	1	2	5	12	1	7	3	84
Lapwing ..	4378	345	358	597	778	1136	1694	1827	11113
Sandpiper, C. ..	231	24	37	44	34	40	55	17	482
Redshank ..	336	26	32	39	46	78	104	94	755
Curlew Common ..	264	67	58	110	59	109	119	132	918
Snipe, Common ..	239	18	8	50	31	40	183	95	664
Woodcock..	373	31	28	57	84	273	414	421	1681
Tern, Sandwich ..	792	77	153	92	421	148	225	800	2708
Tern, Common ..	4704	2	44	425	632	882	227	75	6991
Tern, Arctic ..	154	2	1	9	15	18	10	29	238
Tern, Little ..	184	0	1	29	25	3	6	16	273
Gull, B.-headed ..	11966	—	—	3	—	11	54	23	12057
Gull, Common ..	514	20	36	59	16	28	46	75	800
Gull, Herring ..	518	0	20	43	19	146	166	220	1141
Gull, L. Blk.-bkd..	3366	455	120	565	197	101	287	150	5241
Gull, G. Blk.-bkd..	78	2	3	33	35	28	20	3	202
Kittiwake ..	84	43	86	15	—	15	15	30	288
Razorbill ..	69	18	42	95	8	17	74	10	333
*Guillemot ..	23	106	255	563	—	1	32	1	981
Puffin ..	905	8	45	10	2	21	82	447	1529
Moor-Hen ..	330	33	25	43	58	67	73	72	701

* Of species so marked no record was kept of the number ringed from 1913 to 1920.

SOME PERCENTAGES OF RECOVERIES.

Species.	Number Ringed 1909-27.	Number of these Recovered to date.	Percentages of Recoveries
Rook	986	24	2.4
Starling	13,683	627	4.5
Greenfinch	6,463	100	1.5
Linnet	4,423	30	0.6
Chaffinch	8,039	136	1.6
Yellow-Bunting	1,695	75	4.4
Reed-Bunting	732	2	0.2
Sky-Lark	2,383	21	0.8
Tree-Pipit	784	2	0.2
Meadow-Pipit	1,954	24	1.2
Pied Wagtail	2,005	36	1.7
Spotted Flycatcher	2,075	6	0.2
Willow-Warbler	5,243	29	0.5
Whitethroat	2,186	9	0.4
Mistle-Thrush	1,622	28	1.7
Song-Thrush	25,904	335	1.2
Blackbird	17,423	442	2.5
Wheatear	945	24	2.5
Whinchat	913	6	0.6
Redstart	967	3	0.3
Redbreast	8,073	357	4.4
Hedge-Sparrow	4,850	186	3.8
Swallow... ..	14,623	102	0.6
Martin	5,781	40	0.6
Sand-Martin	2,560	7	0.2
Swift	396	20	5.0
Cuckoo	287	10	3.4
Tawny Owl	320	24	7.5
Kestrel	326	29	8.8
Sparrow-Hawk... ..	182	32	17.5
Heron	306	35	11.4
Mallard	2,397	495	20.6
Teal	784	72	9.1
Cormorant	596	109	18.2
Shag	594	69	11.6
Gannet	968	36	3.7
Wood-Pigeon	1,067	51	4.7
Ringed Plover	419	4	0.9
Lapwing	9,286	248	2.6
Common Sandpiper	465	2	0.4
Redshank	661	29	4.3
Curlew	786	34	4.3
Snipe	569	37	6.5
Woodcock	1,260	88	6.9
Sandwich Tern	1,908	20	1.0
Common Tern	6,916	107	1.5
Black-headed Gull	12,034	526	4.3
Common Gull	725	19	2.6
Herring-Gull	921	26	2.8
Lesser Black-backed Gull	5,091	189	3.7
Guillemot	980	16	1.6
Puffin	1,082	1	0.1

OBITUARY.

ABEL CHAPMAN, 1851-1929.

A BORN hunter, who in pursuit of sport with rod and gun had made many overseas expeditions, ranging from the Arctic to the Equator, Abel Chapman was also a keen field-naturalist of that good, old-fashioned school, whose delight lay as much in studying their quarry in life as in bringing it to hand; men who held it a duty to make themselves acquainted with a country and its fauna, and who spared



ABEL CHAPMAN AT HOUGHTY ON THE N. TYNE

In 1925 (left).

In 1927 (right).

neither time nor trouble to attain that end. It was in the Sixth Form of that Fellowship that Chapman stood. A true lover of Nature, his chiefest joy was ever to woo her in her most fickle moods and 'midst her wildest surroundings, and how ardently that wooing was prosecuted at times is depicted, both with pen and pencil, in his ten published books on natural history. Upon yet another volume he was engaged up to the time of his death, bearing the significant title of

Memories of Four Score Years Less Two, and this his publishers hope to issue very shortly.

Some of his best ornithological work was done on the fells and sea-shore of Northumberland; but what he himself always regarded as his chief contributions to Zoology were the initiation of the Sabi Game Reserve in South Africa, now the Kruger National Park (*vide Retrospect*, p. 339); the saving of the Spanish Ibex from extinction (*ibid.*, p. 97); the discovery of the main breeding-place of Flamingos in Europe (*Wild Spain*, p. 112, and *Unexplored Spain*, p. 265); the burrowing-habits of Grouse in snow; and very full particulars of some of the migrations and plumage-phases in certain Waders, to which he gave the name of "Globe-Spanners" (*Borders and Beyond*, pp. 19 and 56-126).

As a companion in a country ramble, Chapman had few equals, his gift for observation being marvellous and his keen eye seeming to miss nothing that moved, while he himself was always bristling with breezy inspiration and personal magnetism. The ability and vigour with which he transferred to paper what he saw (oft with the aid of a telescope!) has made many of his books classics of their kind, and if his sketches were not always above criticism from an artist's point of view, they had at least the charm of seldom lacking that instinctive touch of *life* which, to a naturalist's eye, is so frequently missing from otherwise beautiful pictures.

A little incident which has, I think, not yet been told, is so characteristic of his ebullient enthusiasm as to be worth relating. It happened one morning in 1898, just before he was about to start upon an already arranged trip to Norway, that he chanced upon an advertisement of some outlying farms for sale on North Tyne. Without an hour's delay he summoned an old friend, his lawyer, and set off to view the ground. They had barely entered upon it, when, from the dog-cart, he detected some dark objects amongst the grass on an elevated ridge. "See those?" he exclaimed. "Yes, Crows, are they not?" came the laconic reply. "No! man, they're Blackcocks! and I think we'll buy the place." They did so, and within a couple of days Chapman had sailed for Bergen. There was no Houxty on the map in those days, but only some dilapidated buildings and a cottage, surrounded by tall, overgrown hedges in which, curiously enough, the present writer had been looking (unsuccessfully) for some reported Lesser Whitethroats just four years previously. The hedges are now cut and trimmed, and, in that part of them which now borders the lawn, Chapman and I found a

pair of these birds nesting in 1916, the first ever noticed on the Houxty estate.

Although born in county Durham, Abel Chapman had made Northumberland his own by adoption, and for many a long day will his strong personality be missed over the wild Border-country. He sleeps in Wark churchyard, and no more fitting dirge could have been sounded over his lone resting-place than the wailing of the Northumberland Small-Pipes which he loved so well.

GEORGE BOLAM.

EDWARD HART.

WE regret to record the death of Mr. Edward Hart, which took place at Christchurch, Hants. on November 1st, 1928, at the age of 81. Mr. Hart had been in failing health for some time past, and his Museum, well known to ornithologists in former days, has been closed for some three years past. A movement was set on foot to induce the Corporation of Bournemouth to purchase the Museum for the public, but the only offer made was totally inadequate and proved a great disappointment to the owner. Numerous references to the collection will be found in Kelsall and Munn's *Birds of Hampshire* and an *Annotated List* was compiled by Mr. Hart of which two editions were published in 1894 and 1913.

BREEDING-HABITS OF PEREGRINE.—*Correction*.—In the lettering under Fig. 3, *antea*, p. 201: "Compare condition of the cyry with Fig. 2" should read "with *Plate 2*."

BIRDS MARKED ABROAD AND RECOVERED IN THE BRITISH ISLES.—*Correction*.—On p. 207, *antea*, under Black-headed Gull, No. 1689 C., date ringed should have been June, 1924, not 1.7.25.

MOOR-HEN CLIMBING WIRE-NETTING.—With reference to the note on this subject (*antea*, p. 218) Mr. J. Atkinson writes that he once saw a Moor-Hen behave exactly as Miss Staunton describes. It was on a canal-like strip of water in one of the Leeds parks, a part of which was divided off by large mesh wirework in order to confine the activities of a pair of Black Swans. The last egg was hatched and parent and young left the nest. The old bird went up the wirework, flying down on the other side, and the young did their best to copy her actions. They climbed easily and tumbled down without hesitation, although they could have swum through without touching a wire.

NOTES

LESSER WHITETHROAT IN CARDIGANSHIRE.

PROFESSOR J. H. SALTER reports a pair of Lesser Whitethroats (*Sylvia c. curruca*) at Aberystwyth from May 6th, 1928, onwards. The male was heard singing till July 2nd. This is a new record for the district, as the species is decidedly rare on the western seaboard of Wales, though there are indications that it is gradually extending its range westwards.

H. E. FORREST.

NOTES OF PROBABLE SCANDINAVIAN CHIFFCHAFF AND OF SIBERIAN CHIFFCHAFF.

SOME years ago I recorded some *Phylloscopi* with a peculiar note observed by Miss E. L. Turner and myself in Kent and Sussex, and by my brother, the late C. J. Alexander, in Flanders (*B.B.*, Vol. X., pp. 263-6; XI., pp. 215-6). Having first recorded them as *Ph. trochilus eversmanni*, I later found, from further observation, that they had dark legs, so that *Ph. collybita abietinus* seemed more probable. Since that time I have failed to note them again, probably because I am rarely in south-east England at the times of migration, except that in December, 1919, I noted several at and near Rome.

On September 27th, 1928, however, on a small down a few miles from Evesham, I heard the note again, and had close views of a dark-legged *Phylloscopus*. Several Common Chiffchaffs (*Ph. c. collybita*) were also in the bushes, evidently passing migrants. As the call-note is quite distinct I am surprised that it has not been commented upon by other ornithologists.

In sending this record, I may perhaps note that in March, 1928, I was able to verify the Siberian Chiffchaff (*Ph. c. tristis*) noted by myself and several other ornithologists at Tunbridge Wells in November and December, 1913, and recorded in *British Birds*, Vol. VII., pp. 296-8. On March 10th, 1928, in some trees by the river Jumna, at Delhi, India, I heard a bird making the well-remembered and characteristic call-note; and on March 29th, at Mount Abu, Rajputana, I observed several, one of them at very close quarters. One of these birds broke into song, and it seemed to me that the song was quite indistinguishable from that of *Ph. c. collybita*. Seebohm, in his *Siberia in Europe*, describes the song as distinct, though of the same character as that of *Ph. c. collybita*. Perhaps if I had heard the bird in full song, I should have detected

the difference. It may seem strange that the note should still have been recognizable after over fourteen years ; but it is so distinctive that I think anyone who has once learnt it would know it after forty years. For six months I had been listening for it, among the bewildering variety of *Phylloscopi* that one meets with in India, especially in the north-east, in winter. The moment I heard the note it took me back to the little valley in Kent where we had watched the Siberian Chiffchaff day after day in December, 1913. H. G. ALEXANDER.

LESSER SPOTTED WOODPECKER IN ANGLESEY.

MR. F. H. MILLS tells me that he was recently shown in Bodorgan Hall a Lesser Spotted Woodpecker (*Dryobates m. comminutus*) which had been obtained there in October, 1926. This is the first record of the species in Anglesey.

H. E. FORREST.

SHORT-EARED OWLS BREEDING IN HAMPSHIRE.

SHORT-EARED OWLS (*Asio f. flammeus*) bred in the spring of 1928 on the Laverstoke Park Estate, Overton, Hants. Two nests of six eggs each were found on April 10th in a three-year old plantation of larch and oak of some ten acres with isolated standing oaks in it. A great deal of white grass came up between the young trees and after the first year this was not cut.

The eggs were laid on the bare ground under tufts of grass. The under-keeper informs me that in each of the two nests found there were five young of different sizes, and later he found only one young Owl alive in each nest and the remains (beaks and claws) of the rest.

There must, I think, have been more than two nests, because when the plantation was first beaten out nineteen to twenty Owls were counted ; on October 6th, when Partridge-driving, I saw eleven, and on November 17th nine were flushed and flew slowly and low, going back and settling again. In January, 1929, seven were counted by one gun, but more did not come forward.

As a record of nesting not included amongst those detailed in Kelsall and Munn's *Birds of Hampshire*. I may mention here that the Rev. L. Wynne, a keen field observer, informs me that he found a nest of this species on a piece of rough ground in Sutton Wood, Ropley, in April, 1882. M. PORTAL.

FOOD OF BITTERNS IN LANCASHIRE.

WITH reference to Mr. Charles F. Archibald's note on this subject (*antea*, p. 215), I should like to record that a male Bittern (*Botaurus c. stellaris*) was shot at Martin Mere on

December 19th, 1927, and another, a female, at Scarisbrick on December 26th in the same year. I examined both birds. The gizzard of the former contained much horse manure and the remains of a large beetle (*Dytiscus marginalis*). The contents of the latter consisted of a large frog and two three-spined sticklebacks. At this time the weather was exceptionally severe, which may account for the strange presence of the horse-manure.

REGINALD WAGSTAFFE.

FULMAR PETREL INLAND IN CHESHIRE.

ON January 17th, 1929, at Witton Flashes, Northwich, Cheshire, I saw a bird hovering in a strange way high above the road in front of me. It turned and flew rapidly past me, and I then saw that it was a Fulmar Petrel (*Fulmarus g. glacialis*), a bird I have seen in plenty in its nesting-haunts.

It flew in a great circle over the frozen Flashes and at last dropped into a patch of open water kept free from ice by the barges that frequent it; one of these put the bird up again and it joined a group of Gulls which were resting on a bank of cinders; the Petrel dropped in shallow water beside them and appeared to be attempting to feed by picking rapidly at the surface of the water, which at this spot was just one or two inches deep. When at rest in the water it was near enough for me to distinguish easily and clearly the tubular nostrils along the beak.

The Fulmar Petrel is a rare bird in Cheshire and has been recorded only twice before: one on the coast in 1854 and another found dead at Chester in 1894. [Cf. *The Vert. Fauna of Cheshire*.]

In this case it was particularly noteworthy that the bird flew with apparently as much ease as if it had been over the ocean; there had been stormy weather on the coast during the previous night, though it was quiet inland, and doubtless it was a storm-driven bird, but it certainly gave no evidence of being in anything but a normal healthy condition.

A. W. BOYD.

THE DIVING HABITS OF THE LONG-TAILED DUCK.

DURING the last five years, we have had one or two excellent opportunities for observing at close quarters the diving habits of the Long-tailed Duck (*Clangula hyemalis*).

On November 4th, 1928, two were watched on the Llwyn-on Reservoir, Brecknockshire. They were, as far as we could see, a male and female in first winter plumage.

It was a dull morning with a slight rain falling, and the birds were well out from the shore. At first sight their

appearance on the water conveyed to us the distinct impression of enlarged editions of the Little Grebe (*Podiceps r. ruficollis*) in first winter plumage, but it was the manner in which they dived which made identification certain, for one of them, diving with its tail towards us, displayed the characteristic diving habit of this species, open wings and spread tail, so that from behind, the observer sees, as the bird disappears under water, two long, pointed wing-tips with the wide-spread tail between. This habit was one of the things that impressed us most when we saw our first specimen in October, 1923, and it has also been noted and described by Mr. Chas. Oldham (*antea*, p. 215).

The birds seemed to remain under water for such a considerable length of time that we decided to time a few of their dives, which we did with two watches, and were surprised to find that four consecutive dives gave 63, 65, 53, and 63 seconds, respectively.

This reservoir is approximately 70 feet deep at the deepest point, and while we cannot say exactly in what depth they were diving, it was certainly in water at least 30 feet deep.

On comparing these figures with published records we find that the *Practical Handbook* says: "duration of dive usually from 30-40 seconds (C. E. Alford)," and T. A. Coward in his *Birds of the British Isles* writes: "The duration of dives has been estimated at over forty seconds, but birds I have watched hardly remained so long."

Other notes are published in *British Birds*, Vol. XIII., where on page 244 Seton Gordon records dives of from 30-45 seconds, and on page 298 J. Alastair Anderson notes a bird making dives of from 60-70 seconds in 35 feet of water. Chas. Oldham (*antea*, p. 215) records dives of from 30-46 seconds.

We have recently had a further opportunity of timing a series of dives under most favourable conditions. A female, apparently in first winter plumage, appeared on the Lisvane Reservoir, near Cardiff, on November 25th, 1928, but the weather was so stormy on that day, and the water so extraordinarily rough, it was impossible to keep the bird in sight sufficiently long for accurate observations to be made; but a week later, December 2nd, the bird was still there, and a dead calm and bright, sunny morning, enabled us to mark the exact second of its disappearance and reappearance. Twelve consecutive dives were timed, and the duration of these were 54, 54, 53, 53, 55, 59, 60, 58, 56, 61, 53 and 59 seconds respectively, giving an average of $56\frac{1}{4}$ seconds.

It would therefore appear that this species, when diving,

in deep, fresh water, frequently stays under for periods of from fifty to sixty, and sometimes seventy, seconds.

Dr. J. M. Dewar, in an article in *British Birds*, Vol. XIII., pages 315 and 316, suggests that a simple general rule for computing the depth of water from the duration of a bird's dives is to allow "twenty seconds for the first fathom and ten seconds for every fathom thereafter." Applying this rule to our observed average above, $56\frac{1}{4}$ seconds, the depth works out to $27\frac{3}{4}$ feet.

We have, by the kindness of Mr. Neil J. Peters, M.Inst.C.E., the Cardiff City Water Engineer, been able to consult a large scale (50 feet to 1 inch) chart of Lisvane Reservoir, which shows the bottom contours at 2 feet intervals, and by plotting out upon it the birds' position, by means of observations made while it was diving, we find that the spot indicated lies between the 26 and 28 feet contour lines, and that the charted depth agrees approximately with that arrived at by Dewar's 20-10 second rule.

GEOFFREY C. S. INGRAM.

H. MORREY SALMON.

WITH regard to Mr. Oldham's quotation from Dr. Townsend, that Long-tailed Ducks (*Clangula hyemalis*) use their wings under water (*antea*, p. 215), I might add that, when alarmed by the sentry duck (always a female), the drakes actually emerge from the water in full flight as if they had flown from the depths. This happens only on the sea in Orkney, where they are very wild, but not so on the inland waters of Loch Stenness, where they are just as tame and usually allow a sailing boat to approach within a few yards of them. I have never seen Eiders or Velvet-Scoters emerge thus in full flight from the sea.

H. W. ROBINSON.

QUAIL IN SUSSEX IN JANUARY.

A QUAIL (*Coturnix c. coturnix*) was shot by Mr. P. H. Sadler on January 4th, 1929, at New Buildings, West Stoke, Chichester.

RAYMOND CARLYON-BRITTON.

LETTERS.

ALPINE CHOUGH WITH MALFORMED BILL.

To the Editors of BRITISH BIRDS.

SIRS,—In connexion with Mr. J. Bartholomew's observation of a Blackbird reaching maturity with a deformed bill (Vol. XXI., p. 69), a somewhat similar case has come under my notice this winter. In this case it is an Alpine Chough (*Pyrrhocorax graculus*) whose upper mandible crosses the lower on the right side.

This Chough is one of several which come daily to my window here for food. I find that cheese is an irresistible attraction for them. The bird has some difficulty in picking up the food but is very persistent, and is less shy than the others.

J. B. WATSON.

ST. MORITZ, Feb. 2nd, 1929.

SONG-PERIOD OF THE CORN-BUNTING.

To the Editors of BRITISH BIRDS.

SIRS,—With reference to Mrs. Seton-Gordon's note on this subject (*antea*, p. 210), exigencies of space demanded rigorous compression in the Field-notes in the *Practical Handbook*, with perhaps consequent ambiguity at times. February and October were not cited as rigidly limiting the period of the Corn-Bunting's song, but rather as indicating the season of its main manifestation. In the Chiltern country, although the mean winter temperature is lower than in Skye, where Mrs. Seton-Gordon's birds were singing in early December, the jangling notes may be heard, although with no regularity, during the winter months, as I remarked some time ago in this magazine (Vol. XVI., p. 292). Given milder climatic conditions and a district where the Corn-Bunting is a permanent resident, it may be that winter song is more frequent. From January 13th to the 20th this year I was in the Land's End peninsula, and every morning I heard one or two singing in a half-hearted way.

CHAS. OLDHAM.

MORTALITY AMONG WRENS.

To the Editors of BRITISH BIRDS.

SIRS,—In reference to Col. J. M. Rogers's query (*antea*, p. 212), I suggest that starvation is the cause of death, from suppression of insect life. At Picket Hill, New Forest, on January 15th, 1926, the thermometer went down to 17°F., with snow. Snow fell on 16th and 17th, accumulating to 5 inches, while the thermometer never rose to 32°. On 18th the thermometer rose to 34°, and when clearing snow from the path outside the creeper-covered wall of the backyard here, six dead Wrens were found in it, all within a few feet of one another. They must have dropped dead out of the creepers into the snow. They showed no injury, but seemed to me thin. The cold had been very severe, but I am inclined to attribute their death to starvation, due to every sort of insect seeking cover. I attribute the disastrous effects of prolonged frosts on the Dartford Warbler to the same cause.

T. G. LONGSTAFF.

[Col. Rogers states that the Wrens were all fat and appeared in excellent condition. It would be interesting to examine critically by dissection birds found dead under similar circumstances.—Eds.]

WRENS ROOSTING IN MARTINS' NESTS.

To the Editors of BRITISH BIRDS.

SIRS,—At dusk on January 13th, 1929, I watched at least twenty-five Wrens going to roost together on our house in West Sussex. They all arrived within a few minutes in twos and threes. The majority went into two or three Martins' nests about twenty-five feet from the ground (on the most sheltered side of the house).

The previous night (January 12th–13th) had been very cold. On several evenings before and after this date I saw a few Wrens going to roost, but could not be sure how many had already arrived.

W. D. SHAW.

"WING-CLAPPING."

To the Editors of BRITISH BIRDS.

SIRS,—After reading Mr. Coward's article (*antea*, p. 134) and subsequent letters on the subject of "Wing-Clapping," I decided to carry out a simple experiment to further the proving of this matter.

I obtained a domestic Pigeon, and on the upper-surface of one wing I secured a piece of very fine, white, tissue paper, punctured with holes to offer less resistance when the bird was in flight. On the other wing I placed a small piece of cotton-wool, which had been moistened with ink. I then liberated the bird in a large empty room, not allowing it

to settle until recapture. When the bird rose I at once noticed that, instead of the customary sharp, distinct clap, it made a rather dull, muffled sound, and, on examination, I found that the paper was besmirched with ink. This experiment was carried out three times with the same result, thus proving, I think, pretty conclusively, that the wings make contact in flight, or, at least, at the moments of rising or settling.

REGINALD WAGSTAFFE.

SOUTHPORT, February 6th, 1929.

To the Editors of BRITISH BIRDS.

SIRS,—With reference to the notes on "Wing-Clapping" (*antea*, pp. 134, 171, 218) no one has mentioned the Long-eared Owl (*Asio otus*) in this connexion, though Mr. Coward refers to its "wing-clapping" in *The Birds of the British Isles*. In an article of mine on this bird in the *Irish Naturalist* (October, 1917) I recorded how both sexes regularly "wing-clap" in the breeding-season. In the article itself I make no reference to the sound being made on the up or down stroke, but in my diary I find the note "up, as if hitting the branches." This must not by any means be taken as "up, striking together." The wing-beats of the species are slow, and even after ten years my recollection is clear enough to rule out the idea of the clap resulting from the wings being struck together vertically. In my article I once use the loose expression "clapping his wings together," but the word "together" was not intended and should have been omitted.

In regard to the Nightjar (*Caprimulgus europæus*) and Mr. Coward's article (*antea*, p. 134) I find that in the *Irish Naturalist* (October, 1916) I refer to the clap as being "made upwards in flight."

JAS. P. BURKITT.

REVIEW.

Handbuch der Zoologie [Edited by Dr. T. Krumbach]. Vol. VIII. Sauropsida, 2nd Part—Aves [By Dr. E. Stresemann]. Parts I.—III. Berlin. W. de Gruyter & Co., 1927–8.

THIS fine work, of which three parts, containing 336 pages of well-printed matter measuring $11\frac{1}{2} \times 8\frac{3}{4}$ in., have been issued, is much more than a "Handbook" in the ordinary sense. The student of the morphology of birds will find here, what is unfortunately still altogether lacking in our language, namely, a full and complete account of the anatomy of birds, embodying the latest researches and written in a clear and concise style.

Beddard's very useful little manual on the *Structure and Classification of Birds* (1898) contains a good deal of such information, but hardly touches the question of reproduction, and is naturally now somewhat out-of-date; while various aspects are treated in the works of Pycraft, Thomson and others. The only works which deal with the whole subject are, of course, the monumental treatise of Fürbringer, which dates back to 1888, and Gadow's contribution to Bronn's *Thier-Reich*, both in German.

During the forty years which have elapsed since the publication of Fürbringer's book, great strides have been made in many departments, especially Genetics, and a compact work on the whole subject, in which the latest researches in all the varied fields are incorporated, has long been a great desideratum to all working ornithologists. Dr. Stresemann is thoroughly qualified to fill this gap owing to his extraordinarily close acquaintance with modern literature, and a comparison between this work and those of his predecessors shows that he has fulfilled his task admirably. The book is well and freely illustrated with figures from many sources and we shall look forward with the greatest interest to the publication of the remaining parts.

F. C. R. JOURDAIN.



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ASSISTED BY

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NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

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REPORT ON THE " BRITISH BIRDS " CENSUS OF HERONRIES, 1928.*

BY

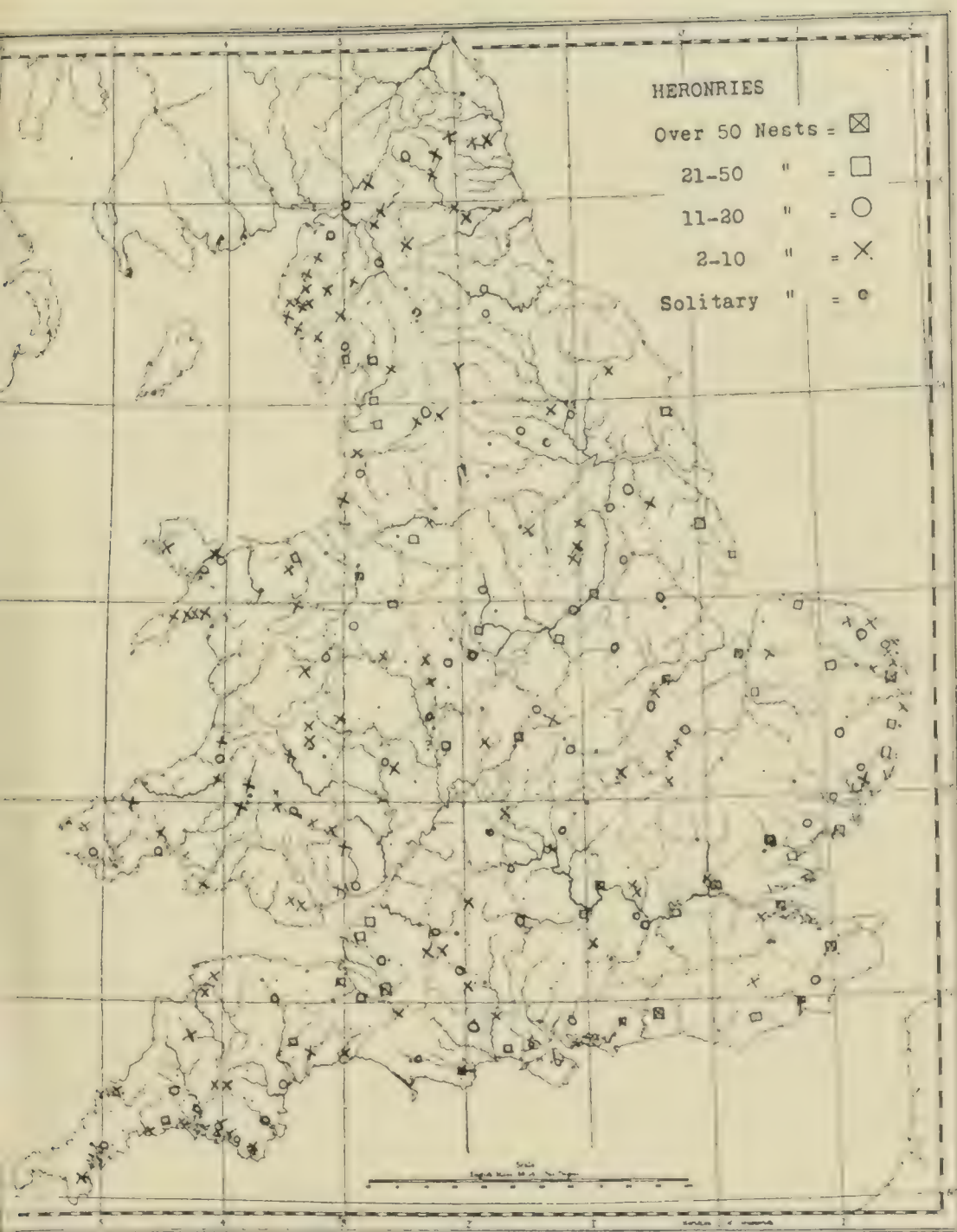
E. M. NICHOLSON.

PART I.

INTRODUCTORY AND HISTORICAL.—The want of satisfactory data regarding the numbers of animals in relation to space and time is an obstacle of which biology is becoming acutely aware. It is clear that until accurate statistics are secured on a sufficient scale research must be restricted, if not actually held up, at a great many points. The small number of observers who are available for any such task, and the obvious difficulties in practice, make it essential at this stage for the object of any national census to be large, conspicuous and easily identified. For such a purpose the Common Heron, *Ardea cinerea cinerea*, is very nearly ideal. In the British Isles it is a well-known and widely-distributed species, whose breeding-colonies, often protected and of long standing, but rarely of embarrassing size, are familiar under the name of heronries.

The first attempt to obtain, through the agency of a periodical, information regarding the heronries of Great Britain was made in Vol. I. of *The Naturalist* as long ago as 1851, when J. McIntosh sent in a list of 32 sites known to him (28 in England, 3 in Scotland and 1 in Ireland) and made a general appeal for additions. A rather larger catalogue of 33 English sites had already been published by Yarrell (1st Ed., 1843), but the *Naturalist* list seems to have been compiled quite independently from the start, and is of greater value, since the numerous correspondents whose notes were added during the three succeeding years often knew their sites at first-hand, and were able to give scraps of contemporary information

*EDITOR'S NOTE.—When Mr. Nicholson suggested that BRITISH BIRDS should organize a census of British heronries in England and Wales and, if possible, Scotland, I agreed to do so provided he would not only assist in obtaining the census, but would undertake the great labour of collating the results and preparing the Report. Neither of us fully realized the labour and difficulties involved, but Mr. Nicholson has shirked nothing and has produced a Report which I feel sure will be regarded as a most efficient and masterly exposition of the immense number of facts collected. We are most grateful to Mr. Nicholson for having done this and I take this opportunity of expressing my sincerest thanks, not only to him, but also to every one of those numerous correspondents who have contributed information and made the Report possible.—H.F.W.



Map to show the distribution of existing heronries in England and Wales according to their size. The locations of the sites are marked as nearly as possible, but exactness is not claimed.

about them. This inquiry, though clearly very incomplete, was the basis for the list in Morris's *British Birds* (1855) which names 71 existing and extinct colonies in England and Wales (some obviously in error) and for the revision of Yarrell (3rd Ed., 1856). In 1872 the late J. E. Harting carried out through the *Field*, and later the *Zoologist*, a rather more extensive inquiry, but the standard was not high and little serious verification seems to have been attempted. This primitive census was continued spasmodically into the 'eighties, and was summed up by Saunders in the 4th edition of Yarrell (1884-5). There followed a period prolific in county avifaunas and (after 1900) in volumes of the Victoria County History, which often contain valuable local information about heronries, but no comprehensive inquiry was repeated until Boyd Watt in Scotland (1908) and Frank Bonnett in England (1912) compiled on their own initiative lists of all the sites they could discover. (In Ireland, which is strictly outside the scope of the present census, although several Irish returns have been received, Ussher and Warren's *Birds of Ireland* (1900) provided a very creditable, though quite incomplete, survey of the Heron population.)

During the war it became evident that widespread tree-felling and other factors were dispersing known heronries on an alarming scale, and in three counties efforts were seriously made to enumerate the local heronries, and to ascertain their size. These efforts resulted in the papers of Wigglesworth for Somerset (1918), Blathwayt for Dorset (1924) and Riviere for Norfolk (1924-5)—the first surveys of any satisfactory accuracy or completeness. In saying this, no disparagement is intended for the pioneers, whose work has a high value so far as it goes, but it must be obvious from the magnitude of the present inquiry, which itself has fallen short of perfection, that the resources at their disposal were quite unequal to the task they set themselves, just as our own resources have proved still unequal to it over a large part of northern Britain. In case this should not be clear a few details will perhaps make it so.

ORGANISATION AND ACKNOWLEDGMENTS.—The census was decided upon in January, 1928, and launched in the February issue of *British Birds* (*antea*, Vol. XXI., p. 210). Appeals were also published in the *Naturalist*, the *Field*, the *Daily Mail* and a great many local papers. The response was at first very patchy, and the success of the census remained for some time in doubt, until a number of ornithologists generously undertook to make themselves locally responsible, and large areas were thus decentralised. It is certain that if the entire conduct of operations had continued to fall on the central organisation, many local breakdowns could never have been avoided. The organisers have the names

of about 393 persons who have assisted, either by actually counting heronries or by contributing other relevant information, and when allowance is made for the number whose contributions have previously been digested by various local organisers over large areas, it must be reckoned that nearly 500 observers have taken part in the present inquiry. Excluding Scotland, 279 occupied sites have been visited and counted, the majority on more than one occasion, and a further large number of alleged heronries have had to be exhaustively investigated before their non-existence could be proved. The running to earth of an extinct or imaginary colony is equally important with the assessment of an existing one; in fact the work which has been done in clearing away from the active list the tangle of long-vanished sites and mistaken records must do much to simplify any repetition of the census. It will readily be understood that this Report is indebted to so many people, and for so much, that any elaborate or detailed acknowledgments would allow little space for anything else. Nor is it necessary for the organisers to emphasise how grateful they are for every contribution which has been made towards the attainment of their objective; the wealth of facts which it is sought to embody in this account is the best tribute possible to the energy, generosity and skill of those who were responsible for securing the material. The names of those known to the compiler of the Report to have supplied information regarding each particular heronry appear in the County Tables against it. To all these, and to those indirect contributors whose names have not reached us, we are very much obliged for their help. Nor must we miss this opportunity of thanking the landowners and tenants, many also unknown to us, who with very rare exceptions readily granted permission to visit the sites, and often put themselves to much trouble to ensure the completeness of the census. It is impossible, however, to refrain from setting on record the names of those observers who saved the census from imminent disaster by undertaking to organise single-handed either counties or whole groups of counties.

In England and Wales, which were under the general direction of H. F. Witherby, the counties were organised as follows (roughly from north to south): Cumberland by Mr. L. E. Hope; Yorkshire by Mr. Riley Fortune; Lancashire, Cheshire and Staffordshire (in part) by Mr. A. W. Boyd; Staffordshire (in part) by Mr. J. R. B. Masfield; Derbyshire by Mr. A. Roebuck; Lincolnshire by Capt. J. S. Reeve; Norfolk by Dr. B. B. Riviere; Leicester by Mr. W. E. Mayes; Shropshire and North Wales by Mr. H. E. Forrest; Monmouth and South Wales by Mr. G. C. S. Ingram; Hereford, Devon, Cornwall, Dorset and Berkshire by E. M. Nicholson; Oxfordshire, Buckinghamshire, Wiltshire and Somerset by Mr.

B. W. Tucker (these last nine partly through the Oxford Ornithological Society); Essex by Mr. W. E. Glegg; London, Middlesex and parts of the Home Counties by the London Natural History Society; and Kent and Sussex by Dr. N. F. Ticehurst.

In Scotland Miss L. J. Rintoul and Miss E. V. Baxter had the most difficult and unwieldy task in organising the census. Unfortunately, they found it impossible in the time at their disposal to prevent large areas of the country from being devoid of observers. A considerable amount of material was, however, collected and the work of Mr. W. Duncan, which covered the whole of Dumfriesshire and Kirkcudbright, Mr. J. Gordon and Mr. E. Richmond Paton in Wigtown, and of Commander G. Hughes-Onslow in Ayrshire should be specially mentioned. The census as a whole however remained very incomplete, and it was felt that an effort should be made to continue it in Scotland in 1929. This we are delighted to be able to say has now been arranged for and Miss Rintoul and Miss Baxter have the promised assistance of Mr. B. D. Nicholson to organise a further census for Scotland, which we sincerely hope will meet with entire success.

In these circumstances we have considered it advisable not to publish the 1928 census returns for Scotland and have handed over the whole of the material collected to the organisers of the new census, for the purpose of which it will be of great value. Before doing so we have extracted certain items on general questions which will be found embodied in various sections of this Report. We would urge those of our readers who can assist in any way in a Scottish census for 1929 to communicate immediately with Miss L. J. Rintoul at Lahill, Largo, Fifeshire, N.B.

In Ireland, which was not a part of the original programme, Mr. R. F. Ruttledge volunteered to undertake Co. Mayo, and successfully investigated 36 sites single-handed, while the Hon. C. Mulholland in Co. Down secured almost all the remainder of the set of Irish data, which have proved very valuable for purposes of comparison.

In addition, there were several observers, not county organisers, who were directly responsible for covering whole series of heronries, and whose extraordinary efforts cannot readily be forgotten—Mr. V. C. Wynne-Edwards and Mr. W. Walmesley White in S. Devon; Mr. M. E. A. Davies in Bucks., Beds., Essex and Durham (ringing altogether 165 young Herons in the season); Miss F. K. Staunton in Suffolk, Notts. and Norfolk; Sir C. Dillwyn-Venables-Llewelyn, Bt., in central Wales; Professor Kennedy Orton in Caernarvon, Denbigh and Anglesey; Capt. H. A. Gilbert in Hereford and the Welsh Marches; Mr. M. Portal in Hampshire and Northumberland; Mr. S. Lewis in Somerset and Wilts; and Rev.

H. S. Allison in Lines. We must add here the name of Mr. B. D. Nicholson, who took a large share in the labour of preparing this Report. The more the subject is considered the more temptation is felt to swell the list still further, but in justice to the heronries, which we have still to deal with, we must reluctantly submit to the limits of space and turn to our data at once.

EXPLANATION OF METHODS.—It is necessary in the first place to explain as briefly as possible on what lines the material has been worked up. The skeleton of the census consists of a list of sites, numbers and dates, but, in addition, a great deal has been accumulated regarding the history of heronries, the habits of the Heron, and various general questions. On all these points much might have been added from published sources, but at the present stage in the study of the Heron in Britain finality is not to be hoped for, and we have considered that the first duty of this Report is to present the unpublished data which the census has gathered. Additions from relevant publications have been made, freely in the case of historical points, occasionally elsewhere, but exhaustiveness is not claimed and has not been aimed at.

The summary of heronries will be found classified in alphabetical order under the various counties of England, Wales and Ireland. The first and most important part of this summary is concerned with sites definitely occupied during 1928, and these are arranged under each county in the order of their recorded size; not alphabetically, since so many colonies might reasonably be looked for under two or more different titles. They are also numbered in that order, for convenience in reference or comparison; thus Holkham, which appears as Norfolk No. 5, was the fifth largest colony in Norfolk according to the 1928 returns. In each of these tables will be seen the name of the site, followed in the second column by the number of occupied nests⁽¹⁾ returned for it in the 1928 census, and wherever possible the date at which this figure was ascertained;⁽²⁾ in the third column by any available figures for

(1) "Occupied nests" include all those returned as built or definitely used during the season, whether any eggs were laid in them or not; in certain instances (e.g., Clumber and Banwell) this figure exceeds the total entered by the local observer on the contrary basis. Where the return is not exact a maximum and minimum is given if possible, and the place of the colony in order of size is determined by the mean between the two. If only an approximate figure is available, it is printed with a plus or minus sign: thus ± 20 = "approximately 20 occupied nests." Where the return gives "at least" a certain figure, or a certain figure "or more," it is printed with a plus following: thus $20+$ = "at least 20 occupied nests." Similarly with a minus following: thus $20-$ = "not more than 20 occupied nests."

(2) In cases where two or more returns, which are not identical, are sent in for the same site, the rule followed has been to accept the later figure, provided it was secured before the latter part of May, as representing the

previous years, a query accompanying those whose accuracy we have serious reason to doubt; in the fourth column by the year of foundation.⁽¹⁾ or alternatively the earliest date to which evidence of the colony's existence goes back; and in the fifth column by the name of the observer or authority on whose information the entry is based.

Under this head we give the names of

- (i) Observers whose first-hand written reports are in our hands, in ordinary type.
- (ii) Observers whose information we have received at second-hand—*i.e.*, in the writing of an intermediary or through word of mouth—*in italics*. (Where there are several names the person responsible for the total shown is usually placed first, the others indicating authorities for historical or other additional information regarding that heronry, or partakers in the count.)
- (iii) Writers of published works, *in brackets*. A fuller reference to the work cited will be found in the List of References at the end. The practice adopted has been to cite only those from whom we have learnt something not found in any of the others; superfluous entries where the same information or a part of it is merely duplicated have, so far as possible, been struck out, nor are references included which have not actually been drawn upon as part of our material, a Bibliography being quite outside our intention.

Negative evidence, as anyone who has taken part in the census will realise, is as valuable as positive in its own way. We have therefore added for each county a list of extinct colonies and known sites vacant during 1928. This list cannot, however, claim the same exhaustiveness which has been attempted in the case of occupied colonies. In fact, shortage of space has compelled us to omit many former sites of which we are aware. We include, nevertheless, all concerning which any hitherto unpublished information, however slight or vague, has been communicated to us. Former

full strength, since a repetition of exact counts has shown that many colonies continue increasing throughout April, if not afterwards. In two or three instances where the presence of complicating factors has prevented a solution on this automatic principle, discretion has had to determine the figure to be used.

⁽¹⁾ "Immemorial" is used to indicate that a heronry has existed as long as anyone questioned could remember, and that no evidence or tradition of its origin has been traced; "Ancient" implies some evidence of existence prior to 1800. Antiquity is reckoned by the colony, not by the site. Thus a colony which has existed within a short distance of its present home for at least 130 years will be taken as "ancient," provided its pedigree appears reasonably continuous, even though the actual site may have shifted a little. Where such movement is known to have occurred the fact is briefly indicated by the word "shifted" and wherever possible the date. Approximate dates are indicated by the abbreviation *c.* (*circa*): thus "*c.* 1900" = about 1900, or "*c.* 1875-80" = probably between 1875 and 1880. On the other hand, if a heronry at a certain place died out in 1850 and the site was recolonised in 1920, it will be shown as (FOUNDED) "1920." But a reference to the earlier colony will appear.

heronries of which we know nothing beyond what is available in published works are included only where we have some approximate information regarding dates or size, etc., and no attempt has been made to compile a complete list. Isolated nests prior to 1900 which are recorded in the obvious local works are systematically omitted. On the other hand certain vague or erroneous records and rumours, which by their persistence have proved a nuisance to the census, are included, in square brackets, for the sake of drawing attention, once for all, to their unreliability. In the case of vacant and extinct sites the information given is—in the first column the site (rather more precisely than is considered necessary as a rule in the case of existing colonies); in the second the approximate size (number of nests) at any date or dates recorded; and in the third the year of desertion—that is, the last year in which breeding took place. Where the year of foundation and desertion is the same, it will be understood that the colony only existed for that single season. The fourth and fifth columns are the same as for existing colonies.

After the County Tables comes the Summary of Counties, giving in successive columns the acreage of each county, the census total of occupied sites and nests, the number of acres per nest and the average number of nests per heronry. In the case of Irish counties these figures are not supplied, the census being incomplete. Some further statistical data and the List of Heronries in order of size conclude Part I.

Part II. summarises as fully as space permits the supplementary information which has been received on a large scale, in addition to the bare census details. This extra material is classified under four main heads. Relations with Man, including all details of persecution, protection and indirect influences; Interrelations with Other Animals, including all details of competition, enemies, food, etc.; Population and Habits, including fertility and mortality, non-breeding birds, seasonal behaviour, etc.; and Distribution and Movements.

Next we deal with the available records of marked Herons, so far as this country is affected, and very briefly with results of census work abroad; finally come the Summary, Conclusions and Recommendations. A full List of References, amplifying the brief citations, is appended to the Report.

EXISTING HERONRIES.

ENGLAND.

		Occupied Nests. 1928.	Previous Years.	Founded.	Authority.
Bedfordshire.					
1. SANDY (2nd colony)	10 (April)	3-4 c. 1920-22 : 0 (?) c. 1923-4 : 3-4 in 1925.	c. 1918-20 (near former site).	M. E. A. Davies. F. W. Pym.	
2. FORD HOUSE, ST. NEOTS	10	1 in 1923.	1923 (? from Pavenham — extinct).	J. S. Addington.	
Berkshire.					
1. COLEY PARK, READING	22 (March 5 onwards).	1 in 1834 : 50 in 1849 : \pm 10 c. 1900 : 50 in 1914.	c. 1834.	W. H. Simonds : (Zoologist, 1849).	
2. WYTHAM, NR. OXFORD	18 (Feb.-May 17)	60 formerly : \pm 14 in 1896-9 : \pm 20 c. 1900 : 10-11 in 1920 : 7 in 1922 : 6 (?) in 1924.	Before 1880 : Shifted 1920.	Oxford Orn. Soc.— E. M. Nicholson : F. L. Blathwayt : B. D. Nicholson : E. D. C. Clark : M. W. Willson : (O.O.S. Reports) : (Aplin) : (V.C.H.) : (Bonnett).	
3. BUSCOT, NR. FARINGDON	15 (May 9)	\pm 30 in 1886 : \pm 20 c. 1900 : \pm 12 in 1922.	Immemorial : Shifted c. 1915-18.	Oxford Orn. Soc.— E. M. Nicholson : B. W. Tucker : E. D. C. Clark : Rajah Lope : (Field, 12.2.87) : (O.O.S. Reports) : (V.C.H.).	
Buckinghamshire.					
1. FAWLEY COURT	73 (March-April)	(1 before 1872) : 2 in 1890 : 4 in 1891 : 10 in 1892 : \pm 13 c. 1900 : 11-16 c. 1898-1910 : \pm 30 in 1917-18 : 44 in 1919.	c. 1882.	H. F. Witherby and M. E. A. Davies : (Harting, 1872) : (V.C.H.) : (Hartert and Jourdain).	
2. BLACK PARK, LANGLEY (prob. 'nr. Uxbridge' of Kennedy)	6 (March-May)	20 in 1925 : 'small' 1868 (?)	Probably before 1868.	R. H. Deane—London N.H.S. : (Clark Kennedy) ? : (Bonnett).	
3. BROUGHTON BROOK	5-6 (March 28)	1 in 1921 (April 8) : 3 in 1922. 11—in 1927.	1920 or earlier.	H. L. Cochrane.	
4. BANGOR'S PARK, IVER	2 (April-May)	1 in 1927.	1927 (from Black Park ?)	R. H. Deane—London N.H.S.	
Cheshire.					
1. EATON HALL	60 (March 29)	\pm 30 in 1874 : 40-50 in 1893 and 1899 : 78 in 1907 : 60 in 1908 : 20-30 in 1923 (April 21).	Immemorial	G. H. Franklin : A. W. Boyd : (Coward and Oldham) : (Coward).	
2. TABLEY	39 (April)	1 in 1871 : 3 in 1874 : \pm 12 in 1881 : \pm 15 in 1893 : 19 in 1900 : 21 in 1901 : 16 in 1902 and 1906 : 21 in 1907 : \pm 40 in 1926.	1871.	A. W. Boyd : G. H. Franklin : (Coward & Oldham) : (Coward).	

ENGLAND—continued.

ENGLAND—continued.		Occupied Nests.	Founded.	Authority.
	1928.	Previous Years.		
Cheshire—continued.				
3. COMBERMERE ABBEY (2nd colony)	39 (April 16)	1 in 1902 or 1903 : ± 20 in 1919 : 26 in 1924 : 33 in 1927.	1902 or 1903 on former site. Shifted c. 1904-6.	Sir K. Crossley : A. W. Boyd : E. A. Foden.
4. NORTON PRIORY	8-10 (April)	Fairly constant : 15-16 in 1927.	1902 or 1903	F. C. Dale—Warring- ton Field Club : A. W. Boyd.
5. MARBURY PARK	1+	1 in 1922 and 1923.	—	— Bentley, per A. W. Boyd.

Cornwall.

1. TRENANT PARK, DULOE (scattered)	28+ (April 28)	8 prob. before 1850 : 'a few' 1850-51 : 1-3 annually c. 1850-70 : ± 10 pre-war.	Immemorial.	F. W. Dewhurst : Major Peel : (Natura- list, 1852) : (Zoo- logist, 1872).
2. MERTHER, TRESSIL- LIAN RIVER	12+ April	—	Probably before 1906.	Miss K. M. Skinner : G. H. Harvey : (V.C.H.) ?
3. TREBARTHA HALL, LAUNCESTON	10-14 (Feb. and April)	7 in 1920.	Shifted 1926.	F. W. Dewhurst : S. Rodd : J. Clark, per Miss M. Collins.
4. SHEVOCK WOOD (2nd colony)	10 (March- April)	—	1921 from Warren Point	F. W. Dewhurst.
5. TREVELVER	10 (March 21)	3 in 1920 : 5 in 1926 : 4 in 1927.	c. 1880 (?) from Prideaux Place.	G. W. Garceau : Miss L. Waters, per Miss M. Collins : C. R. Prideaux-Brune.
6. ST. WINNOW (? 'H. Fowey' of Rodd)	8 (March- May 13)	—	Probably before 1870.	V. C. Wynne-Edwards : F. W. Dewhurst : E. M. Nicholson : (Zoologist, 1870).
7. MERTHEN, HELFORD RIVER	3 (April)	—	—	W. H. Thompson.
8. ST. CADOC FARM, PADSTOW	1 (May 13)	—	—	V. C. Wynne-Edwards.
9. DINHAM, ST. MINVER	1 (April)	1 in 1927.	—	Miss L. Waters, per Miss M. Collins.

Cumberland.

1. CROFTON HALL PARK, THURSBY	14 (April 13)	'Several' in 1885 : 8 in 1888.	Immemorial : has shifted.	L. E. Hope : (Bonnett) : (Macpherson).
2. FLORISTON	13 (May 3)	20-22 in 1912.	Immemorial : shifted 1916.	L. E. Hope : R. H. Brown : (Macpher- son) : (Bonnett).
3. EDENHALL	(a) 12 (April 12) (b) —	(a) 18 in 1889. (b) 42 in 1889.	Immemorial : (b) Ceased 1897 or earlier.	L. E. Hope.
4. FELL HILL, BRAMPTON (formerly WALTON WOOD)	10	18-20 before 1912 : 12 in 1922 : 2-3 in 1926.	Immemorial : shifted c. 1923.	Lord Henley, per L. E. Hope : (Bonnett).
5. ULDALE	9 (April- May)	—	(? from Wy- thorp — ex- tinct).	R. H. Brown.
6. ULPHA PARK WOOD	8 (April 30)	—	Before c. 1890 : has shifted.	Viscount Cross.

ENGLAND—*continued.*

ENGLAND— <i>continued.</i>	Occupied Nests.		Founded.	Authority.
	1928.	Previous Years.		
Cumberland— <i>continued.</i>				
7. NR. LORTON (a) CASS HOWE (b) BROAD LEYS	(a) 4-5 (May) (b) 2	(a) 2 in 1924. (b) —	(a) 1924. (b) 1928, (? from Wythorp — extinct). —	S. D. Stanley-Dodgson : L. E. Hope. S. D. Stanley-Dodgson : L. E. Hope.
8. GREAT CORBY HIGH WOOD	5 (March and May)	—	—	R. Graham: E. Blezard.
9. MUNCASTER CASTLE	5 (March- April)	'Large' (1886): 16-20 c. 1892: 7-8 c. 1925-6.	Before 1621.	W. Marchant: (Macpherson): (Macpherson and Duckworth): (Zoologist, 1908).
10. NETHERBY HALL (formerly RIDDINGS)	5 (April 26)	'Large' (1886): 60-70 formerly.	Immemorial: shifted c. 1916.	L. E. Hope: (Macpherson and Duckworth): (Bonnett).
11. PONSONBY HALL	5 (April 21)	—	Before 1890.	L. E. Hope.
12. DENT WOOD, CLEATOR MOOR	4	—	1922 or earlier.	J. Sewell.
13. MANESTY WOOD, DERWENT- WATER	4 (May 12)	2 in 1923: 0 in 1924: 2 in 1925: 3 in 1926: 1 in 1927.	1923, probably from Wythorp (Extinct).	H. Valentine.
14. ESKETT WOOD, CLEATOR MOOR	3	2 in 1927.	1924 (?).	J. Sewell.
15. WANWOOD, S. TYNE	3	12 pre-war.	?	G. Bolam.
16. GREYSTOKE	2	'Large' (1886): 'small' (1912).	Immemorial: has shifted.	Mrs. F. Leyborne Popham: (Yarrell, 1st Ed.): (Macpherson & Duckworth): (Bonnett).
17. ENNERDALE WATER	2	—	1922 (?).	J. Sewell.
18. LAMPLUGH HALL	2	—	1925 (?).	,

Derbyshire.

1. SHIRLEY WOOD	1	1 in 1900: 1 annually now.	1900.	A. Roebuck: F. C. R. Jourdain.
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Devonshire

1. KILLERTON	± 40 (May 23)	'Considerable in 1867: 'small' (1912): has lately increased.	Immemorial	<i>Head Keeper</i> , per W. Walmesley White: (Zoologist, 1873): (Bonnett).
2. WARLEIGH WOOD	20 (March 17)	—	Immemorial: shifted c. 1892-3.	V. C. Wynne-Edwards: M. L. Ware: (Yarrell, 1st Ed.).
3. EASTDON HOUSE, STARCROSS	18 (May 8 and 11)	11— in 1912.	1910 from Powderham (Extinct).	W. Walmesley White: R. W. Stansell.
4. SHARPHAM	14 (March 4)	21+ c. 1880-90.	Ancient.	V. C. Wynne-Edwards: <i>Oxley Parker</i> : (D'Urban and Mathew).

ENGLAND--continued.

ENGLAND—continued.		Occupied Nests. 1928.	Previous Years.	Founded.	Authority.
Devonshire—continued.					
5. STADBURY WOOD (formerly AUNE- MOUTH ?)	11 (May 10)	6 before 1912.	Immemorial : has shifted across river.	V. C. Wynne-Edwards : (Bonnett).	
6. HALLWELL HOUSE	9 (May 5)	30 + in 1881 (April 26).	Immemorial.	V. C. Wynne-Edwards : (D'Urban & Mathew).	
7. SALSTON, OTTERY ST. MARY	(a) 8 (May 21) (b) 1	Usually 3-5 : 8 previous maximum for c. 60 years.	Ancient.	W. Walmesley White : <i>Major Coleridge.</i>	
8. STEDCOMBE WOOD	9 (April 10)	Formerly 25-30.	1850 from Shute (Ex- tinct).	A. L. W. Mayo : W. Walmesley White : <i>Miss Stephens.</i>	
9. ARLINGTON COURT	8 (March 24)	Larger before c. 1890 : 3 in 1907 : 4-6 in 1927.	Immemorial.	E. M. Nicholson : A. C. Blake : (Zoologist 1908).	
10. ORCHETON WOODS	8 (March 24)	Increased lately (?).	Immemorial.	V. C. Wynne-Edwards : (D'Urban & Mathew).	
11. STADSON FARM, NR. HOLS- WORTHY	8 (April 30)	1 in 1920.	1920.	W. H. Simonds.	
12. ARCHERTON, NR. POST- BRIDGE (formerly BELLEVER)	(a) 4 (April 5) (b) 2 (May)	'Fairly constant.'	Before c. 1870 : shifted 1885.	V. C. Wynne-Edwards : <i>Sir Courtenay Bennett:</i> (Parfitt) : (Harting, 1872).	
13. FREMINGTON	5 (March —April)	Many more for- merly.	Immemorial : shifted c. 1912-13.	E. M. Nicholson : Sheila L. Hutchinson.	
14. PUSLINCH	4 (March 31)	Generally 5 or 6.	Immemorial.	V. C. Wynne-Edwards : J. Yonge.	
15. SOUTH WEM- BURY WOOD	± 3-4.	—	—	A. Bastard, per V. C. Wynne-Edwards.	
16. BAGGA TOR	2 (April 1)	2 in 1927.	Immemorial.	V. C. Wynne-Edwards : N. F. Crawshaw.	
17. ANNERY- MONKLEIGH AREA	1	1 annually.	Immemorial : has shifted lately.	Sheila L. Hutchinson : W. H. Rogers, per J. G. Hamling.	

Dorset.

1. ARNE	± 112 (April 14)	2 in 1854-55: 'large 1876 & 1888: 9 in 1919 (April): 30-40 in 1924 (March 18).	1854-55 (?) (from Brank- sea -- extinct ?).	H. P. Hanham and E. M. Nicholson: W. A. S. Lewis: (Blathwayt).
2. CRICHEL PARK	± 19 (March & May 19)	—	Before c. 1835.	H. P. Hanham and Sir J. Hanham, Bt.: <i>Agent per F. L. Blathwayt:</i> (Blath- wayt).
3. KNIGHTON HEATH WOOD	(a) ± 15 (b) 0	± 12-15 usually. (b) 7-8 till 1921.	(a) c. 1912. (b) c. 1918.	— <i>Bond, per F. L. Blathwayt:</i> W. J. Ashford: H. P. Han- ham: (Blathwayt).
4. SHERBORNE PARK	6	± 7 c. 1917-28.	Before 1851.	O. D. Holt: F. L. <i>Blathwayt:</i> (Blath- wayt).

ENGLAND—*continued.*

ENGLAND—continued.		Occupied Nests. 1928.	Previous Years.	Founded.	Authority.
Durham					
1. GAINFORD	(a) 5 (May 22) (b) 6 (May 28)	} 'Small' in 1851: 19 before 1912.	Immemorial: shifted and divided c. 1914-18.	M. E. A. Davies: (Naturalist, 1852): (Bonnett).	
Essex.					
1. ST. OSYTH PARK	75 (April 6)	1 in 1872: \pm 30-40 c. 1900: 61 in 1927.	1872, from Brightlingsea (Extinct).	W. E. Glegg: (V.C.H.): (Miller Christy).	
2. LINCOLN ISLAND, WANSTEAD PARK (formerly Heronry Pond)	60 (May 15)	\pm 30 in 1869: \pm 25 in 1883: 43 in 1884: 38 in 1887: 50-51 in 1896: 49 in 1897: 53 in 1926.	Ancient: shift- ed before 1890.	W. E. Glegg—London N.H.S.: (Miller Christy): (V.C.H.): (Hudson).	
3. MUNDON	35— (August)	(Not previously re- corded).	Certainly since 1913: on for- mer site.	W. E. Glegg: M. E. A. Davies.	
4. BOREHAM HOUSE	22 (March 25)	1 in 1883: 6 in 1886 & 1889: 60 + c. 20 yrs. ago: 30 in 1926: 32 in 1927.	c. 1860-70: shifted 1884.	M. E. A. Davies: (Miller Christy): (V.C.H.).	
5. CHEST WOOD, BIRCH	19 (April 9)	1 in 1861: 3 in 1862: \pm 100 in 1877: 125 in 1888 (April): \pm 170 (??) in 1890: \pm 200 (??) c. 1900.	1861: shifted to Calves Pas- ture Wood, 1878: re- turned c. 1890-1902.	W. E. Glegg: (V.C.H.): (Miller Christy).	
6. LEA VALLEY RESERVOIR No. 5	5 (May 23)	—	1914	W. E. Glegg—London N.H.S.: H. F. Witherby.	
Gloucestershire.					
1. ADLESTROP	2	—	1928.	Miss H. E. Donovan.	
Hampshire.					
1. HINTON ADMIRAL	31 (April 22)	\pm 20 in 1904 and 1911.	c. 1875.	G. W. Godman: L. W. Hinxman: R. E. Coles: (<i>late</i>) <i>Sir G. Meyrick</i> : (Kelsall and Munn).	
2. WICKHAM	16 (April 14)	2-5 pre-war: 14— post-war: 17-19 in 1926: 11-12 in 1927.	Immemorial: (before 1861): shifted 1926- 27.	A. Arnold, per M. Portal.	
3. WOOTTON, I. O. W. (in 3 groups)	\pm 15 (April)	\pm 12 in 1927.	'Over 30 years. ago.'	J. F. and M. Wynne: G. G. Hartill.	
4. SOWLEY POND	\pm 10	\pm 24 c. 1901: \pm 30 in 1904.	Immemorial.	Sir T. H. C. Troubridge and C. Ingham: R. E. Coles: (V.C.H.): (Kelsall and Munn).	
5. SOMERLEY PARK	7	\pm 20 c. 1900: \pm 60 (?) in 1904: 25 pre-war: \pm 20 in 1914.	Before 1870: shifted c. 1916 & split into 3 groups: 1 only 1928.	B. J. Ringrose: L. W. Hinxman: <i>Sir J.</i> <i>Hanham, Bt.</i> , per E. M. Nicholson: (V.C.H.): (Kelsall and Munn).	
6. BUCKERSLEY PITS	3	—	(? offshoot of Sowley).	Sir T. H. C. Troubridge and C. Ingham).	
7. ELVETHAM HALL (2nd colony)	3 (March 12)	—	1925 (?) nr. former site.	T. L. Williams.	

ENGLAND—continued.

GLAND—continued.	1928.	Occupied Nests. Previous Years.	Founded.	Authority.
Hampshire—continued.				
8. BARTON, I.O.W. (Osborne Estate)	2 (?)	± 12 c. 1916: 'slowly dying out.'	Before c. 1900.	J. F. Wynne.
Herefordshire.				
1. BERRINGTON	15 (April 20)	15-20 in 1884: 7 in 1899: 8-9 before 1912: ± 2 c. 1918.	Immemorial.	G. H. Treasure: (Bull): (V.C.H.): (Bonnett).
2. NETHER WOOD, HOLME LACEY	± 8	—	?	H. A. Gilbert: E. D. C. Clark.
3. HAMPTON COURT	5 (April 8)	2 in 1926: 0 in 1927.	?	Hon. R. C. Devereux, per H. A. Gilbert.
Huntingdonshire.				
1. HEMINGFORD PARK	14 (April 12)	(Increased gradually, 1911-28).	1911	A. E. Lees.
2. DIDDINGTON WOOD	3 (June 1)	2 in 1895: incr. to 18 in 1903: declining since.	1895: (has shifted).	A. E. Lees.
Kent.				
1. HIGH HALSTOW	65+ (May 9)	1 in 1900: 16 before 1912: ± 15-20 in 1927.	1900	E. G. B. Meade-Waldo: G. J. Scholey: (Bonnett).
2. CHILHAM	51 (March 30)	80+ in 1857: 70 in 1889: 70-110 annually 1867-1906.	Before 1280-93.	N. F. Richardson: Sir E. Davis: W. Stephen Jones: E. G. B. Meade-Waldo: (Ticehurst).
3. ASHENDEN, NR. TENTERDEN	18-22 (April 27)	4 at first: 7 'a yr. or 2 later.'	c. 1914-18.	N. F. Ticehurst: N. F. Richardson.
4. COBHAM	± 6	40-50 annually before 1906: 'has gradually dwindled.'	Immemorial: shifted 1859.	Earl of Darnley, per E. G. B. Meade-Waldo: (Ticehurst): (Yarrell, 3rd Ed.).
5. EASTWELL PARK	1	1 in 1927.	1927.	N. F. Richardson.
6. THE MOTE, MAIDSTONE	1	—	1928.	J. R. Hale.
Lancashire.				
1. HAMILTON WOOD, NR. LANCASTER (formerly Crane Wood)	42	± 12-14 c. 1872: 25-30 c. 1885. (Fairly constant past 20 years.)	c. 1800-1810: shifted c. 20 years ago.	H. L. Procter: (Harting, 1872): (Mitchell).
2. HOLKER MOSS, CARK-IN- CARTMEL	± 24	± 20 recently.	—	F. S. Chapman: A. E. Wright.
3. CLAUGHTON, NR. GARSTANG	± 20-25.	4-6 c. 1890: 'strong' previously: increasing since c. 1918.	Immemorial: shifted and temporarily ceased 1874-1884.	Fitzherbert Brockholes, per A. W. Boyd: (Mitchell).
4. SCARISBRICK HALL	19 (March-April)	± 24 in 1872: 8-10 annually (c. 1890): ± 25-30 in c. 1906: 9—in 1915.	Immemorial.	F. W. Holder and R. Wagstaffe: (Mitchell): (V.C.H.).
5. RUSLAND MOSS, FURNESS	± 12.	± 8-10 annually before 1890.	Ancient: shifted c. 1870 & again more recently.	C. F. Archibald: (Macpherson).

ENGLAND—continued.

		1928.	Occupied nests. Previous years.	Founded.	Authority.
Lancashire—continued.					
6. THURLAND CASTLE, TUNSTALL	7 (May 12)	—	—	'Not much more than 20 years.'	A. A. Duncan : W. E. Alexander : — <i>Lees.</i>
7. INCE BLUNDELL HALL	4 (March- April)	23 c. 1890 : ± 20 annually (1906) : 3-4 up to 1926 : 10 in 1927.	—	Before c. 1863.	J. Appleby : (V.C.H.)
8. WARTON, NR. LYTHAM	2 (April 12)	1 in 1922 : 2 in 1923 : 6 in 1926 : 1 in 1927.	—	1922.	<i>R. Blacoe</i> and <i>G. Shor- rock</i> , per A. W. Boyd
Leicestershire.					
1. STAPLEFORD PARK	11	± 6 c. 1840 : 40-50 in 1884 (May 5) : up to 15 lately.	—	Immemorial.	W. E. Mayes : (Mon- tagu Browne).
Lincolnshire.					
1. WILLUGHBY WOOD	42 (March 24)	—	—	(None known before 1910.)	Major Rawnsley, per J. S. Reeve.
2. MUCKTON WOOD	34 (March 24)	20 before 1912.	—	Immemorial : (app. inter- rupted, c. 1870).	J. S. Reeve and Major Rawnsley : (Bonnett) (Harting, 1872).
3. EVEDON WOOD, HAVERHOLME	20 (March 26)	40 c. 1884 : average 30 since c. 1900 : 18-20 in 1908.	—	Immemorial.	J. S. Reeve : (Zoo- logist, 1908) : (Yar- rell, 4th Ed.).
4. WHARTON WOOD	20 (April)	2 in 1912 or 1913 : 12-14 c. 1917-18 : 6 in 1927.	—	1912 or 1913.	<i>Sir H. B. Bacon</i> , Bt. per H. F. Allison.
5. OLD HAGG WOOD, DODDINGTON*	18 (March 29)	20 formerly : ± 7 in 1908 (March 10) : 20 + in 1926.	—	Immemorial : shifted c. 1905-6.	J. S. Reeve and C. F. G. Jarvis : (Bonnett) (Zoologist, 1908).
6. APPLEBY	13	12 + in 1908 : ± 13 c. 1916-18.	—	Probably c. 1870-80, from Broughton (Extinct).	W. C. Brown, per H. F. Allison : (Zoo- logist, 1908).
7. GRANGE WOOD, KINGERBY	2 (April 7)	1 at first : 5 c. 1925.	—	c. 1918.	J. J. Baldwin-Young per J. S. Reeve.
8. ASWARBY PARK, NR. SLEAFORD	1 (May)	?	?	?	<i>Sir G. Whichcote</i> , Bt. per J. S. Reeve.
Monmouth.					
1. PWLLHEAD WOOD†	± 15-16 (?)	9 between c. 1900- 1911 : 15-16 in 1916.	—	Prob. before 1900.	A. Silver : H. J. Lovelock.
2. RAILWAY WOOD, LLANOVER.	7-8 (April- May)	8-10 usually.	—	Immemorial.	A. L. Tatham.
3. TREDEGAR PARK, NEWPORT	4 (Feb. 29)	± 10-12 till 1918 : ± 6 since.	—	? : shifted 1918.	H. J. Lovelock.
Norfolk.					
1. REEDHAM (Modern colony)	94	± 30 in 1894 : ± 80-90 in 1901 & 1924 : 86 c. 1911.	—	'New' in 1895 : on ancient site.	B. B. Riviere : (Riviere) : (Bonnett) (Zoologist, 1895 and 1905).
2. ISLINGTON	70-80	± 60-100 1910-24 : 80 in 1924.	—	Immemorial.	B. B. Riviere : (Riviere).

* Formerly SKELLINGTHORPE WOOD.

† Certainly occupied 1928, but no satisfactory return.

ENGLAND—*continued.*

ENGLAND—continued.		Occupied Nests. 1928.	Previous Years.	Founded.	Authority.
Norfolk—continued.					
3. BLACK DYKE	35-36	60-70 in 1924.	1882	B. B. Riviere: (Riviere)	
4. KIMBERLEY	34	2 in 1868: 30 in 1911: \pm 15 in 1924.	c. 1848.	" "	
5. HOLKHAM	25-30	4 in 1872: 33 in 1879: 14 in 1889: 7 in 1890: 26 in 1921: 20 + in 1924.	c. 1870.	" "	
6. MAUTBY HALL	11	100- in 1882: 12 in 1887: 0 in 1903: 1 in 1923: 2 in 1924.	c. 1870-80 (?).	" "	
7. HOVETON	10-12	7 in 1921: \pm 12 in 1924.	1920.	" "	
8. MELTON HALL	9	2 in 1903: usually 15 recently.	Immemorial.	" (Zoologist, 1904)	
9. RANWORTH	9	1 in 1911: 4 in 1922: \pm 4 in 1924.	1911, near former site.	" (Riviere).	
10. NARFORD	7	6 in 1911: 10-15 in 1922: 11 in 1924.	Before 1911 (? from West-acre. — extinct).	" "	
11. BUCKENHAM	7	1 in 1914 & 1915: 3 in 1920: 4 in 1921: 5-6 in 1924.	1914.	" "	
12. GUNTON	6-8	31 in 1871: 38 in 1882: 19 in 1911: \pm 30 in 1924.	Before 1870.	B. B. Riviere: (Riviere): (Harting, 1872).	
13. CATFIELD	3	4 in 1911: 12 in 1918: 18 in 1921: \pm 8 in 1924.	c. 1906.	B. B. Riviere: (Riviere).	
14. FISHLEY, ACLE	3	1 in 1923-24.	1923.	" "	
15. HORNING	3	0 in 1903: 2 c. 1922-24.	Prob. before 1900.	H. P. Hanham (Riviere).	
16. STOKESBY	3	'Small' c. 1872: 8 c. 1911.	Before 1870: interrupted lately.	B. B. Riviere (Bonnett): (Zoologist, 1872).	
17. HOLLING	1	1 in 1927.	1927.	B. B. Riviere: A. W. Boyd.	
18. ELLINGHAM	1	Always 1.	Before 1923.	Miss F. K. Staunton F. C. R. Jourdain.	
19. ROLLESBY	1	Usually 1: sometimes 2.	1903.	B. B. Riviere (Riviere).	
Northamptonshire.					
1. MILTON PARK, PETERBOROUGH	135 (April 20)	1 or 3 at foundation: \pm 93 in 1887 (March 18): \pm 120-150 in 1889: 120 c. 1920.	Prob. 1819: has shifted.	G. W. Fitzwilliam: A. B. Baxter and E. S. Bazlington: (Lilford).	
2. ALTHORP PARK	15 (April)	38 + (?) in 1634: 100 ? in 1842: 10 in 1889 (May 29): 0-7 c. 1911.	Before 1600.	J. C. Harrison: (Lilford): (Bonnett).	
3. ALDWINCLE	11 (March 25)	(Odd nest nr. in 1896.)	1894.	A. G. Lascelles: (Lilford).	

ENGLAND—*continued.*

ENGLAND— <i>continued.</i>		Occupied Nests.	Founded.	Authority.
1928.		Previous Years.		
Northamptonshire— <i>continued.</i>				
4. ELTON PARK	4 (April-May)	4 in 1911: 11 in 1912: 14 in 1914: 16 in 1919: fewer since.	1907.	D. Proby: <i>J. Crisp.</i>
5. ASHBY ST. LEDGERS	2 (May 25)	?	?	R. M. Casey.

Northumberland.

1. KEILDER	± 10-12 (scattered)	± 3-4 c. 25 yrs. ago.	?	<i>J. Macdonald</i> , per A. Chapman.
2. NR. BELLINGHAM (a) Garrett Hott (b) Lee Hall	(a) 7 (b) 2	{ 5-10 annually. { 15 maximum.	Before 1903.	M. Portal: T. Robson.
3. 'TYNE VALLEY'	7-10—	—	—	Mrs. C. Hodgkin.
4. SWARLAND SPRINGWOOD	6 (April-May)	11 in 1912.	c. 1890 (?).	A. R. Robson.
5. CATELEUGH, NR. BABSWOOD	± 5-6 (?)	(Steady past 30 yrs.)	?	<i>S. Dodd</i> , per T. Robson.
6. GREAT TOSSON, ROTHBURY	4	—	—	M. Portal.
7. 'NR HARBOTTLE'	3 (May 18)	—	c. 1914-18 (?).	Mrs. C. Hodgkin.
8. STYFORD	3 (March)	—	c. 1918 or earlier.	„
9. CHILLINGHAM	1	Usually 60-100 before c. 1910: ± 40 c. 1911: sometimes in 2 groups.	Immemorial: broken up c. 1915-18.	Earl of Tankerville: (Naturalist, 1851): (Bolam): (Evans).

Nottinghamshire.

1. STANFORD HALL	30 (March 13)	35 in 1916: 17 in 1924.	Immemorial: (Prob. before c. 1830) but has shifted.	H. O. Peacock.
2. EAST STOKE	28-30 (March 28)	40-50 c. 1907: 35-40 c. 1911.	Immemorial.	Miss F. K. Staunton: (Whitaker): (Bonnett).
3. COLWICK WOODS	14 (March 1)	12 c. 1911.	Immemorial.	H. E. Birks: (Sterland and Whitaker): (Bonnett): (Macgillivray).
4. SERLBY PARK	7 (May)	—	Immemorial.	F. B. Hawkins.
5. CLUMBER (2nd colony)	5	1 in 1926: 2 in 1927.	1926 on former site.	„
6. THORESBY PARK (2nd colony)	4 (May)	10-12 c. 1907.	Prob. c. 1870.	F. B. Hawkins: (Sterland and Whitaker).

Oxfordshire.

1. OTMOOR	19 (March-May)	± 25 in 1920 & 1921: 8 in 1923 & 1924.	Prob. c. 1914-19.	Oxford Orn. Soc.—B. W. Tucker: E. M. and B. D. Nicholson: <i>G. O. R. Facey</i> : Col. J. Buchan, M.P.: G. Tickner: (O.O.S. Reports).
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ENGLAND—continued.

ENGLAND—continued.		Occupied Nests.	Founded.	Authority.
		1928.	Previous Years.	
Shropshire.				
1. HALSTON, NR. OSWESTRY	± 20.	150 c. '60 yrs. ago': 12 before 1879: 50 + c. 20-30 yrs. ago: 35 before 1907: 39 recently.	Immemorial.	H. E. Forrest: J. H. Owen: J. Jones: (Forrest): (V.C.H.)
2. SUNDORNE, NR. UFFINGTON	10 (March 1)	—	c. 1908-10: (from Atting- ham-extinct).	R. Walker, per H. E. Forrest.
3. ACTON POOL, WALCOT PARK (formerly FLOWDEN?)	9	6-10 before 1912: 50-60 till 1921.	Immemorial: shifted 1921 and again c. 1926-7.	Lord Powis: H. Lynes and E. Edmonds: C. H. Woodhouse: (V.C.H.): (Bonnett): (Bull).
Somerset.				
1. SOMERTON WOOD	± 100.	± 30 c. 1900: ± 40 c. 1908: 75-80 in 1918 & 1926.	Immemorial: shifted c.1878.	B. W. Tucker: (Wigles- worth).
2. HALSWELL PARK	52 (April)	Few till c. 1880: 30-50 in 1883: ± 80 c. 1893: 20-30 in 1901: 21 in 1918.	1856.	B. W. Tucker: (Wigles- worth).
3. BANWELL WOOD	31-34 (April 13)	± 15 usually: 15-18 in 1927.	Immemorial.	B. W. Tucker: S. Lewis: F. A. Bruton: (antea, Vol. XXI., p. 257).
4. BROCKLEY PARK	27-30 (April)	18 in 1901: 10-12 c. 1908 & 1917. 17— in 1926.	Ancient.	B. W. Tucker: L. A. Hawkins: Bristol Naturalists' Society, per H. Tetley: S. Lewis: F. A. Bruton: (Wiglesworth).
5. SWELL WOOD, NR. FIVEHEAD	26 (March- April)	8-9 in 1922: 3 + in 1923: 0 in 1924: 3 in 1926: 12 in 1927.	1908 or earlier.	C. J. Pring: B. W. Tucker: H. Las- celles: S. Lewis: F. C. Drake.
6. ALLERS WOOD, NR. DULVERTON (formerly PINGTON)	± 15.	± 10 c. 1872: 7-8 in 1908: 9 in 1917: ± 15 in 1918.	Prob. before 1545: shifted 1790, c. 1831 & 1891.	B. W. Tucker: F. Goss: H. Campbell Thomson: (Wigles- worth): (Zoologist, 1908): (D'Urban and Mathew).
7. ICEHOUSE COPSE, NR. SHAPWICK.	14 (March- June)	± 4 in 1924 & 1925.	Before 1924.	S. Lewis and B. W. Tucker.
8. MARSTON PARK	4-5 (April 10)	(Odd nest c. 1915.)	c. 1925.	B. W. Tucker: J. Snelgrove: Mrs. Bon- ham Christie.
9. EDINGTON	2	In 1927.	(Discovered 1927).	S. Lewis.
10. 'NR. WILLITON	1	3 in 1923: 1 usu- ally.	Prob. 1922.	Owner, per B. W. Tucker.
11. EXFORD	1	Invariably 1.	Before 1917.	B. W. Tucker: A. C. Carne.
Staffordshire.				
1. BAGOT'S PARK	26 (May 8)	40-50 formerly: 19 in 1893.	Ancient.	J. R. B. Masefield: H. V. Bamford: (V.C.H.).
2. ILAM HALL	13 (March- May 13)	4 in 1916: 11 in 1926: 12 in 1927.	c. 1912-16 (?) from Consall	E. Grinley: J. R. B. Masefield: F. C. R. Jourdain.

ENGLAND—*continued.*

ENGLAND— <i>continued.</i>	1928.	Occupied Nests. Previous Years.	Founded.	Authority.
Staffordshire—<i>continued.</i>				
3. GAILEY POOL	± 12	1 in 1918.	Before 1918 (?).	A. W. Boyd: J. R. B. Masefield.
4. AQUALATE MERE (formerly NORBURY PARK)	± 8-10	'Divers nests' in 1686: 40-50 formerly: ± 6 in 1892: 0 in 1893 & 1894: 2-3 in 1901: 2 in 1912.	Ancient (before 1686).	J. R. Morris, per H. E. Forrest: J. R. B. Masefield: (Plot): (V.C.H.).
5. WESTON PARK	± 7-8	10 maximum: 4-5 c. 1911.	1901 or 1902, from Patshull (Extinct).	H. G. O. Bridgeman (Bonnett).
6. CONSALL WOOD	1 (May 4)	9 in 1902: 10 in 1904 (April): 7 in 1905 (March): 17 in 1908 (May): 15 in 1909 (May): 14 in 1911 (May): 7 in 1912 (May): 5 in 1913 (May): 2-3 annually 1923-27.	Immemorial.	J. R. B. Masefield.
Suffolk.				
1. NR. NACTON—BRIDGE WOOD, ROBERTS' GROVE & GOLDSMITH'S COVERT	± 50 (March)	70 c. 1911: 12-15 in 1926.	c. 1900 from Orwell Park (Extinct).	Rt. Hon. E. G. Pretymann: C. B. Ticehurst: T. G. Powell: (Bonnett).
2. BLACKHEATH	33 (May)	± 200 in 1871: 2 in 1902: increasing since 1908-10.	Immemorial.	Mrs. E. Clodd: Mrs. M. Vernon Wentworth: (Zoologist, 1872).
3. WALBERSWICK-BLYTHBURGH (including offshoot)	± 33 (April-May)	± 6 in 1872: 6-7 in 1894: 6 in 1902: 30 in 1926.	Prior to 1872: from Blythburgh Lodge (?): (Extinct).	C. E. Alford: F. C. Cook: E. Cooper: P. A. Buxton: C. B. Ticehurst: F. C. R. Jourdain: (Zoologist, 1872).
4. FLIXTON PARK	19 (March)	7 in 1884: 16 in 1903: 17 in 1908: 16-20 in 1926.	1884.	Miss F. K. Staunton: C. B. Ticehurst: F. C. R. Jourdain: (Zoologist, 1885).
5. BROMESWELL HEATH	14-16 (April)	1+ in 1919: 6-8 in 1920: 10-12 in 1926.	1919 from 100-acre Wood (Extinct).	C. H. Roper: C. E. Baker: B. J. Ringrose: C. B. Ticehurst: Anon., per Mrs. E. Clodd.
6. BRANTHAM COURT	12-16	6-8 in 1925: increasing since.	1918-19.	Lady Owen-Mackenzie, per F. E. Buckland and E. M. Nicholson.
7. BENACRE	6 (April)	2 in 1921 & 1922: 2 in 1923: 4 in 1924 & 1927.	Prob. c. 1918.	Miss F. K. Staunton.
8. HEMLEY HALL WOOD	3-4 (May)	3-4 c. 1924-25.	—	T. G. Powell.
9. NR. BORLEY (Suffolk Bank)	1	—	1928.	A. Silver.
Surrey.				
1. RICHMOND PARK (Sidmouth & Pond Plantations)	± 30 (March-May)	1 in 1880: 'scattered nests' in 1884: 13-14 in 1890: 40+ in 1909: 30-40 c. 1911.	c. 1880: has shifted.	J. Rudge Harding—London N.H.S.: (Zoologist, 1909): (Yarrell, 4th Ed.): (Bonnett).

ENGLAND—continued.

ENGLAND—continued	Occupied Nests.		Founded.	Authority.
	1928.	Previous Years.		
Surrey—continued.				
2. BURWOOD PARK, HERSHAM	20 + (May)	± 30 c. 1925-6.	Probably from Ashley (Extinct).	Miss C. Molony, per Mrs. H. M. Rait Kerr: A. Ezra: P. A. Buxton, per B. W. Tucker.
3. WINDSOR PARK (VIRGINIA WATER)	15-16 (in 4 groups)	± 10 c. 1900.	Immemorial.	H. F. Witherby: A. Mayall: (V. C. H. Berks.): (Yarrell, 1st Ed.).
4. WAVERLEY	(a) 1 (b) 0	± 18 in 1892: ± 11 in 1913.	Immemorial.	Mrs. L. E. Taylor: W. A. Shaw (Bucknill).
5. BETCHWORTH	Prob. 1	—	—	F. Jenkins.
Sussex.				
1. ALDERSHAW, BECKLEY	103-109 (April 6)	± 400 c. 1840: ± 200 in 1870 & 1886: 15 in 1896: ± 40 in 1905: ± 110 in 1909: 100— in 1926: ± 80 in 1927.	Immemorial: c. 1840: shifted c. 1840 & 1892-6 (incl.).	D. D. Godfrey and E. F. Wood: N. F. Ticehurst: A. N. Holmes: J. R. Hale: F. Bonnett: (Borrer): (Zoologist, 1896).
2. PARIHAM	58 (April 11-May 7)	117 in 1872 (April 15): 100 in 1876 (May): ± 90-120 c. 1870-77: 30 ± in 1901: 49 in 1923.	c. 1832 from Michelgrove (Extinct).	E. Dean: A. S. D. Smith: (Borrer): (V.C.H.): (Knox).
3. GOODWOOD (formerly MOLECOMB)	(a) 52 (March-April) (b) 1	'Considerable' 1890: 15-20 in 1924: 44 in 1926 (March 19).	c. 1879-80: nr. ancient site: shifted by 1927.	S.D. & G. O. R. Facey: W. D. Shaw: R. Carlyon Britton: C. Smeed: (Borrer).
4. WINDMILL HILL	46-48 (April 9)	150 temp. Elizabeth.: 'small' c. 1850: 50 in 1879: 25-35 c. 1900-07.	Before 1600: shifted (? date) & again c. 1860.	D. D. Godfrey and E. F. Wood: N. F. Ticehurst: (Borrer): (Yarrell, 4th Ed.): (Naturalist, 1851).
5. ERIDGE PARK	8 (March-June)	1 at foundation: ± 8 past 20 yrs.	c. 1890.	R. Ware.
Warwickshire.				
1. WARWICK PARK	26 (April-May)	± 80 c. 1850: 'much reduced' c. 1900: now increasing.	Immemorial.	P. K. Chance: L. F. J. Phelps: (Macgillivray): (V.C.H.): (Yarrell, 1st Ed.).
2. COMBE ABBEY (scattered)	19 (April-June ?)	± 20 since c. 1904.	Immemorial: began shifting 1924.	H. G. Wagstaff, per R. Hudson: P. K. Chance: (Yarrell, 3rd Ed.).
3. RAGLEY PARK, NR. ALCESTER	10 (May 5)	± 50 c. 1872: 'small' c. 1903: 12-14 'some yrs. back.'	Immemorial: shifted c. 1911-12.	P. K. Chance: R. Hudson: (Harting, 1872): (V.C.H.).
4. STANFORD PARK	± 7 (permission to visit not granted).	—	c. 1923.	R. M. Carey.
5. HOLBROOK GRANGE, LONG LAWFORD	1 (June 12)	1 annually except 1926.	c. 1924.	..
Westmorland.				
1. DALLAM TOWER	29 (May 12)	11 c. 1817: up to 32 mid-19th cent.: 27 in 1877 (April): 16-30 for past 50 yrs.: 26 in 1927.	Ancient: shifted 1775.	J. Mashiter: J. Watson: (Gough).
2. ELTERWATER	4	1 c. 1918-19: 3-6 since.	c. 1918-19: once shifted temporarily.	A. Astley.

ENGLAND—*continued.*

	Occupied Nests.		Founded.	Authority.
	1928.	Previous Years.		
Wiltshire.				
1. FONTHILL HOUSE	14-18 (April)	8-12 in 1887: 'always steady last 40-50 years.'	Immemorial.	M. W. Willson: J. F. Wynne: (Smith).
2. BRADFORD WOOD	13 (March-April)	2 in 1916: 5 in 1927.	1916.	J. Penrose.
3. SAVERNAKE FOREST	(a) 10 (March & May)	(a) 4 in 1883: 10 + c. 1884-6: 6 in 1887: 4-6 1895-1906: 5 in 1916: 20— in 1921 or 1922: 8-9 + in 1926.	From Bedwyn Brails (Extinct) 1882-3: shifted c. 1886: again temporarily 1926-7.	(a) W. D. Shaw: C. Lee: (Smith).
	(b) 1 (April-May)	(b) —	(b) 1928 (?).	(b) P. K. Chance: C. R. M. F. Cruttwell, per E. M. Nicholson.
4. BOWOOD PARK	± 10	± 12-20 some yrs. before 1852: ± 20 c. 1872: '40-60 formerly' (1887): 15 in 1887: 3 in 1927.	Immemorial.	Lord Lansdowne, per W. D. Shaw: J. H. Clark: (Smith): (Naturalist, 1852): (Harting, 1872).
5. COMPTON PARK	3-4	Always 11-15 c. 1837-1887: 12 in 1887.	Immemorial.	C. Penruddocke, per M. W. Willson: (Smith).
6. LONGLEAT	3 (April 24)	1-2 always till 1852: later up to 20-30: 10-15 c. 1887: 'never more than 4' recently.	Ancient	S. Lewis: (Smith): (Harting 1872.).
7. SOMERHAM BROOK	1 (April)	1 annually.	1925 or earlier.	J. H. Clark.
Worcestershire.				
1. WESTWOOD PARK, DROITWICH	23 + (May 17)	3-4 at first: ± 16 (?) till after 1921: incr. since.	c. 1911 (?) on former site.	H. G. Alexander.
Yorkshire.				
1. WASSAND, HORNSEA MERE	21 (April 14)	1 in 1881: ± 10 in 1887: 12 in 1893: 13 in 1895: 18 in 1904: 16 in 1905: 33 in 1912: 37 in 1921.	1881 (?) from Place Newton (Extinct).	E. W. Wade: W. H. St. Quintin: (Wade).
2. LORD WOOD, FLASBY	17 (Feb.-June)	20 in 1881: 17 in 1905.	Ancient: shifted 1865: and again c. 1915?	H. B. Booth: (Nelson).
3. STILLING-FLEET = MOREBY OR MORBY PARK	16	± 50 c. 1884: 10-12 in 1892: 8-9 c. 1906: 36 in 1912: 12 in 1927.	Before 1883.	W. Hiscock: (Nelson).
4. HAREWOOD PARK	15	± 20-30 in 1866: 7 in 1902: 5 in 1903: 18 in 1927.	Immemorial: has shifted.	R. Fortune: (Nelson).
5. GILLING BIG WOOD	10-12	17-20 formerly: ± 10 c. 1904: 12-15 c. 1911.	Immemorial.	Capt. Hunter: J. England: (Bonnett).
6. PARK GHYLL (formerly GISBURN PARK)	8-9 (May)	17 in 1906: decreasing since 1913.	After 1890 from Harrop Hall (Extinct): has shifted.	H. B. Booth: F. Hanson: S. Crook: R. Butterfield: (Nelson).
7. SCAMPSTON PARK, NR. MALTON	8-9 (May 17)	± 8 c. 1906: recently 6-8 annually except c. 1915-18, when 20 +.	c. 1903 from Red Carr (Extinct).	W. H. St. Quintin.

ENGLAND—continued.

ENGLAND—continued.		Occupied Nests.	Founded.	Authority.
		1928.	Previous Years.	
Yorkshire—continued.				
8. HOLMESCAR WOOD, ROSSINGTON	8 (April 16)	6 in 1927.	Immemorial.	G. B. Sheffner: F. B. Hawkins.
9. KIRK GILL, HUBBER- HOLME	7-8 (April)	—	1914.	H. B. Booth.
10. HEALAUGH	4-5	1 c. 1920.	c. 1920.	Sir E. Brooksbank.
11. GRASS WOODS, NR. GRASSINGTON	2-3	—	1928.	R. Butterfield, per H. B. Booth.
12. BOLTON ABBEY	1	1 in 1926 & 1927.	1926.	H. B. Booth.
[13. ELVINGTON WOOD	All particulars and permission for observation refused by owner.			R. Fortune.]

WALES.

Anglesey.

1. TRE-IORWERTH	(a) 4 (Feb.-May (b) 2	± 8 before 1907: 20 c. 1907: 10 in 1927.	(a) 1876. (b) c. 1918, prob. from Plas Trega- ion (Extinct).	Kennedy Orton: (Forrest).
2. CADNANT ISLAND (* CRAIG-Y- DON, erroneously)	3 (April 8)	12-20 before 1907: 40 in 1910: 5 in 1913: 12-14 in 1927.	?	W. Aspden: Kennedy Orton: (Forrest): (Forrest, 1919).

Breconshire.

1. VENNY FACH WOOD, NR. BRECON	12-15 (?)	—	—	<i>Barr Phillips</i> , per J. Lloyd and Sir C. Venables-Llewelyn, Bt.
2. CWRT-Y- GOLLEN, NR. CRICK- HOWELL*	8 (May 7)	(? 1 c. 1919.)	Immemorial.	A. L. Tatham: Miss B. Ware.
3. GLANWYE, NR. BUILTH	8	2 in 1925: 4 in 1926: 7 in 1927.	1924, nr. for- mer site.	H. Trevor.
4. GILESTONE, NR. TALYBONT STATION	6 (?)	—	? From Buck- land	<i>Barr Phillips</i> , per J. Lloyd and Sir C. Venables-Llewelyn, Bt.
5. WERNVIGAN FARM, SENNY- BRIDGE	6 (?)	± 6 c. 1884: 'never beyond 6' (1899).	Immemorial.	Ditto ditto (Yarrell, 4th Ed.): (Cambridge Phillips).
6. ASHFORD	2	—	—	<i>Barr Phillips</i> , per J. Lloyd and Sir C. Venables-Llewelyn, Bt.

Caernarvonshire.

1. PENRHYN PARK, BANGOR	(a) 5 (March- April) (b) 12	12 + c. 1911: 'v. few,' 1912: 15-20 before c. 1919.	Immemorial.	W. Aspden: (Zoo- logist, 1912): (Forrest). (1919): (Bonnett).
2. VAYNOL PARK	14 (March- May)	4-6 before 1912: 4 in 1927.	Immemorial (before c. 1882)	W. Aspden: Kennedy Orton: (Bonnett).
3. ABERDUNANT	5 (March- May)	15 before 1907: '10-12 formerly.'	1875.	Kennedy Orton: (Forrest).
4. NANHORON PARK	3 (May 9)	4 in 1927: 5 maxi- mum.	c. 1916: (1 in 1908 & 1909).	Kennedy Orton: (Forrest, 1919).

*Otherwise spelt COURT-Y-GOLLEN, COED-Y-GELLY, or GLANGRWYNEY.

WALES—*continued*

MALES—continued

	1928.	Occupied Nests. Previous Years.	Founded.	Authority.
Caernarvonshire—continued.				
5. BROOMHALL, NR. PWLLHEL	(a) 2 (March & May) (b) 0	{ ± 15-20 c. 1902 : 10 'a few years. back.' }	(a) Immemorial. (b) Recent. 1927 (?).	Kennedy Orton : (Zoologist, 1903).
6. YSTUMLLYN	2 (May 12)	—		Kennedy Orton.
7. GLYNLLIFON PARK	1 (April 24)	± 4 before 1920.	c. 1908 or ear- lier.	" "
Cardigan.				
1. LLANLIYR, NR. TALSARN	18 + (May 5)	± 10 c. 60 yrs. ago.	Ancient.	Mrs. G. M. Douglas : W. Miall Jones.
2. HIGHMEAD, LLANBYTHER	(a) 9-11. (b) 0 (c) 0	30-35 before 1886 : (a) 2-3 c. 1887-90 : increasing since 1913 : (b) & (c) 1 for some yrs.	Prob. before 1750 : shifted c. 1887.	H. Davies-Evans.
3. LLIDIARDAN, LLANILAR	3	6-7 annually till 1925 : 3 in 1926.	Immemorial-	W. Miall Jones G. C. S. Ingram.
Carmarthen.				
1. LLANMILOE, PENDINE	20 (April)	± 30 before 1894 : usually 6-9.	Immemorial.	Morgan Jones, per Miss E. Falkener : D. E. Stephens : (Mathew).
2. ABERGLASNEY (GOLDEN GROVE)	± 9 (?) (March & June)	—	Immemorial.	H. M. Fraser.
3. NEUADD FAWR	8	± 50 c. 1884.	Immemorial : shifted 1928.	I. E. Campbell-Davys : (Yarrell, 4th Ed.) : (Cambridge Phillips).
4. CASTELL- GOIFOD, ST. CLEARS	1-2 (?)	Always 1-2.	—	J. W. Buckley, per H. M. Fraser.
5. YSTRAD, NR. LLANDOVERY	1	1 annually.	1923.	I. E. Campbell-Davys. per H. M. Fraser : W. J. Constable.
Denbighshire.				
1. TAN-Y-GAER, ST. ASAPH	± 22 (March 19-20)	—	Immemorial : shifted fairly recently.	W. M. Congreve.
2. GLANYWERN HALL, NR. DENBIGH	7 + (March 12-14)	10 before 1912 : ± 6 in 1923 : 6-8 1923-28.	Immemorial : (before 1870).	W. M. Congreve : (Bonnett).
3. VOELAS, R. CONWAY	(a) 1 (April 22) (b) 0	(a) ± 15 in 1904 : 12 c. 1907 : (b) 1-2 in 1927.	(a) Ancient. (b) c. 1912.	Kennedy Orton : (Forrest). (Zoologist, 1873).
Glamorgan.				
1. TREGUFF FARM, NR. LLAN- BETHERY	9 (March 9)	3 in 1915 : 5 in 1925 : 7 in 1926.	1915 : prob. from Hensol (shifted).	G. C. S. Ingram.
2. PENRICE CASTLE (OXWICH) IN GOWER	6 (April)	15-20 up to c. 1893 : 18-20 in 1925 : 'small' c. 1911.	Immemorial : shifted c. 1893 & again 1918.	J. R. K. White, per Miss V. Peel : H. M. Prichard : (Naturalist, 1851) : (Bonnett).
3. HENSOL CASTLE	4-5	'Large,' 1872 : 5 in 1923 & 1924 : 3 in 1925 & 1927.	Immemorial : shifted 1915.	G. C. S. Ingram : (Harting, 1872).
Merioneth.				
1. RUG, NR. CORWEN	± 4-5	'A few' c. 1872 : 4 c. 1906.	Immemorial : has shifted lately.	W. Wynn, per H. E. Forrest : (Forrest) : (Zoologist, 1873).
2. PENIARTH TOWYN	No infor- mation	7 c. 1906.	Immemorial.	(Forrest) : (Harting, 1872).
3. PENNAL, PENMAIDYFI	No infor- mation	—	—	E. H. T. Bible.

WALES—continued.

	Occupied Nests. 1928.	Previous Years.	Founded.	Authority.
Montgomery.				
1. THE FRON, LEIGHTON (formerly GREENWOOD)	14-15	—	c. 1900 (?): shifted c. 1916.	J. M. Naylor and Col. Price-Davies, per H. E. Forrest.
2. LLYN EBYR, LLANIDLOES	3	Always 2-3.	. 1914.	J. R. Morris, per H. E. Forrest.
Pembrokeshire.				
1. SLEBECH PARK	± 10-12.	—	From Poyntz Castle (Ex- tinct).	B. Lloyd and C. Old- ham: (Mathew).
2. LLWYN GWAIR	10 + (early June)	—	?	B. Lloyd and C. Old- ham: H. M. Fraser.
3. SOLVA	1-3 (April- June)	6-8 in 1926.	?	W. A. S. Lewis: B. Lloyd and C. Oldham: G. C. S. Ingram.
4. PORTH LISKY	1	—	?	Mrs. H. Boyd Watt.
Radnorshire.				
1. PENYBONT (= R. Ithon of Bonnett?)	(a) 3 (April- May) (b) 1	3 in 1927.	(a) Immemorial. (b) 1928.	P. E. A. Morshead: Sir C. Venables- Llewelyn, Bt.: W. J. Constable: J. Hamer: (Bonnett?).
2. BRYNDRAE- NOG WOOD, BEGNILDY, NR. KNIGHTON	3 (March- April)	10 in 1923: maxi- mum.	1916 (?).	O. R. Owen: H. A. Gilbert.
3. WAINDDU COMMON, NR. PENYBONT	1 (April- May)	—	Immemorial.	P. E. A. Morshead.

IRELAND.

Co. Down.

1. CASTLEWARD, STRANGFORD	23	—	Immemorial.	Lord Bangor, per Hon. C. Mulholland.
2. MOUNT STEW- ART, NEW- TOWARDS	20 (April)	—	Shifted 1916.	W. A. Miller, per Hon. C. Mulholland.
3. MOURNE PARK, KILKEEL	(a) 5 (mid-May) (b) 0	(a) 5-7 since 1920: (b) 2 annually till 1928.	(a) ? (b) c. 1900 (?).	Earl of Kilmorey, per Hon. C. Mulholland.
4. BALLYHOSSET, DOWN- PATRICK	3-4	18 c. 1926.	Before 1918.	Hon. C. Mulholland.

Co. Dublin.

1. RATHFARNHAM CASTLE	2 (Feb.- April)	—	Immemorial.	P. G. Kennedy.
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Co. Mayo.*

1. CLAGGAN WOOD, NR. ACHILL	30-35 (May 9)	± 70 a few years ago.	Immemorial.	R. F. Rutledge.
2. LOUGH CARRA, GLENEARY ISLAND	18 (June 2)	—	* Some years. at any rate.	..

* The observer, instead of conforming with the somewhat arbitrary county boundary, has included the Lough Mask heronries in co. Mayo and ignored Lough Corrib, which is mostly in co. Galway. In this we have necessarily followed him, but have shown in square brackets, the sites—the existing and the extinct—which are actually across the co. Galway boundary.

IRELAND—*continued.*

Co. Mayo— <i>continued.</i>	Occupied Nests.		Founded.	Authority.
	1928.	Previous Years.		
3. INNISHDAFF, NEWPORT BAY	10 (May 8)	—	Since c. 1908.	R. F. Ruttledge.
4. WESTPORT	9 (April 25)	Slight decrease	Prob. ancient.	„
5. SAINT'S ISLAND, L. MASK	8 (May 12)	—	1925 or 1926.	„
6. CORTOON, KILLALA	7 (April 30)	—	Immemorial: (before c. 1850).	„
7. OWNMORE, CROSS- MOLLINA (a) Lecarrow- waddy Wood (b) Callow- hill Wood (c) Calf Park Wood	(a) 5 (April 28) (b) 1 (c) 1	—	Immemorial: has shifted.	„
8. TAWNYARD LOUGH	6-8 (May 2)	—	Prob. ancient.	„
9. GLANTREAGUE ISLAND, L. MASK	6 (May 2)	—	Immemorial.	„
10. WILFORD WOOD, NEWPORT	6 (May 2)	—	Immemorial.	„
11. ATTORVALLY ISLAND, L. CARROW- MORE	5 (May 29)	—	Immemorial.	„
12. BALLINAMORE HOUSE, KILTAMAGH	5 (May 13)	—	Has shifted.	„
13. BALLINDINE WOOD, CASTLE MAC- GARRETT	5 (May 20)	Decreasing	Prob. ancient: shifted lately.	„
14. GLENDARARY WOOD, ACHILL	5 (May 27)	—	After 1870.	„
15. NEWPORT HOUSE	3 (April 29)	14 c. 20 years ago.	Immemorial: has shifted.	R. F. Ruttledge: (Naturalist, 1851).
16. BALLINAFORD HOUSE, NR. BALLA	2 (May)	Up to 6 till a few years ago.	Immemorial: deserted 2-3 years lately: has shifted.	R. F. Ruttledge.
17. BREAGHY, CASTLEBAR	2 (May)	—	c. 1922-3: shifts often.	„
18. FIN LOUGH, NR. LEENAUN	2	2 annually.	?	„
19. LOUGH MOHER, NR. WESTPORT	1 (?) (May 2)	2 till 1927.	?	„

[There were no occupied nests during 1928 in:—

CAMBRIDGESHIRE	teste W. H. Thompson, Miss E. L. Turner, Mrs. H. M. Rait Kerr, A. H. Evans and J. C. F. Fryer, per E. M. Nicholson.
HERTFORDSHIRE	„ C. Oldham, W. Bickerton and J. C. F. Fryer, per E. M. Nicholson.
LONDON	} „ London Natural History Society, per H. A. Littlejohn.
MIDDLESEX	
RUTLAND	„ J. R. B. Masefield.
FLINTSHIRE	„ H. E. Forrest and W. M. Congreve.
ISLE OF MAN	„ P. G. Ralfe.

SITES VACANT AND EXTINCT.

ENGLAND.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Bedfordshire.				
3. SANDY (1st colony)	2 in 1901 & 1907: 3-4 in 1910: 3 in 1911: \pm 8 in 1914.	c. 1916-17.	1890 or earlier.	M. E. A. Davies: J. Steele Elliot: (V.C.H.).
4. PAVENHAM BURY	2 in 1920 (May): more in 1921: 2-3 in 1923.	1923 (? to Ford House, q.v.).	1919.	J. Steele Elliot: H. W. Finlinson: W. and B. F. Haylock.
5. TWIN WOODS, CLAPHAM	'Several.'	c. 1850.	?	(V.C.H.).
6. LUTON HOO, PARK	'Several.'	c. 1869.	?	"
7. WOBURN	2 in 1855.	—	—	"
8. SOUTHILL PARK, NR. BIGGLESWADE	1 before 1895: 1 in 1899.	—	—	"
Berkshire.				
4. HINTON WALDRIST	\pm 15 in 1916: 20 in 1918: \pm 20 in 1919: 15 in 1924.	1925.	1908.	Oxford Ornith. Soc. F. C. R. Jourdain, E. M. Nicholson: S. D. Facey, B. W. Tucker, B. D. Nicholson, E. C. Clark: (O.O.S. Reports).
5. NR. KINGSTON BAGPUIZE	1 prior to 1922.	—	—	F. C. R. Jourdain.
6. READING (near: additional to Coley Park)	No first-hand evi- dence for existence of this heronry: probably a bad re- cord.	—	—	(Naturalist, 1851): (Clark Kennedy): (Morris).
Buckinghamshire.				
5. HARLEYFORD MANOR	40 + in 1866: 1924-5. \pm 10-12 formerly: \pm 2-3 c. 1900: very few (1904).	1924-5.	Imme- memorial.	R. H. Deane (London: Natural History Society): Lady Clayton, per Sir T. Troubridge and G. Sher- wood: C. E. Stubbs, per F. C. R. Jourdain: (V.C.H.): (Zoologist, 1873 and 1904).
6. GAYHURST WOOD & LONGLAND WOOD, NEWPORT PAGNELL	7 (?) in 1921 (April): 20-25 formerly.	1927.	Ancient: shifted.	H. L. Cochrane.
7. DINTON	1 c. 1912 or 1913.	—	—	(Hartert & Jourdain).
Cambridgeshire.				
1. CHIPPENHAM PARK	(a) \pm 20. (b) 1-2 c. 1911.	(a) 1903. (b) c. 1914-18.	(a) Before 1856. (b) 1911.	(a) (Yarrell, 3rd Ed.): (Bonnett). (b) Mrs. H. M. Rait Kerr: (Bonnett): W. H. Thompson.
2. FORTREY HALL, MEPAL	—	Before 1885.	—	(Late) A. Fryer, per A. H. Evans.
3. CHATTERIS, NR. ELY	\pm 6.	c. 1918.	—	J. C. F. Fryer, per E. M. Nicholson

ENGLAND—*continued*.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Cheshire.				
6. HOOTON HALL	0 in 1870-73: 6 in 1874: \pm 20 1880-90.	c. 1891.	Before 1842.	J. A. Pownall: (Yarrell, 1st Ed.): (Coward and Oldham).
7. BURTON-ON-DEE	\pm 20 c. 1867: 2 + in 1874.	1880.	1857.	J. A. Pownall: (Coward and Oldham).
8. COMBERMERE (1st colony)	—	c. 1850.	—	(Coward and Oldham): (Yarrell, 1st Ed.).
9. ASTON HALL, FRODSHAM	\pm 20 annually, falling to \pm 12 in 1888.	1890.	Before 1825.	Warrington Field Club—F. C. Dale: (Coward and Oldham).
10. HOO MOOR, GOYT VALLEY	—	Vacant 1928.	—	J. Armitage, per A. W. Boyd.
11. REDESMERE, SIDDINGTON	1 'pre-war': 2 in 1902.	—	—	F. A. Montague, per E. M. Nicholson: R. M. Garnett, per A. W. Boyd: (Coward).
12. OULTON PARK	—	c. 1850.	Before 1842.	(Yarrell, 1st Ed.): (Coward and Oldham).
13. DUNHAM MASSEY PARK	—	1833 to Tatton.	?	(Yarrell, 1st Ed.): (Coward and Oldham).
14. TATTON MERE	—	c. 1834-5 to Arley.	c. 1833-4 from D. Massey.	(Coward and Oldham).
15. ARLEY (? = ARDLEY HALL)	—	c. 1850.	c. 1834-5. from Tatton	(Coward and Oldham): (Yarrell, 1st Ed.).
16. BAGMERE	App. none now.	—	Before 1912	A. W. Boyd: (Bonnett).
17. TANAL	1-2	—	—	(Coward).
Cornwall.				
10. WARREN POINT, NR. ANTONY	—	1921. to Sheviack.	—	F. W. Dewhurst.
11. SHEVIOCK WOOD (1st colony)	3 in 1873.	?	c. 1872.	(Zoologist, 1873).
12. PRIDEAUX PLACE, PADSTOW	—	Before 1880.	—	C. R. Prideaux-Brune: V. C. Wynne-Edwards: F. A. Montague, per E. M. Nicholson.
13. '1 MILE EAST OF WADE-BRIDGE'	1	No inf., 1928.	1927.	G. A. Garceau.
14. BONALLACH BARTON, HELFORD RIVER	3	Before 1928.	—	W. H. Thompson.
15. LAMORRAN RIVER	—	(None traced)	Before 1870.	G. H. Harvey: Miss K. M. Skinner: (Yarrell, 4th Ed.): (Zoologist, 1870).
16. NR. FOWEY (? = St. Winnow?)	—	—	Before 1884.	(Yarrell, 4th Ed.).
17. BICTON MILL, R. LYNHER	1 (?).	Some years ago.	(Record uncertain.)	W. H. Paynter.
18. MILLTOWN, NR. LOSTWITHIEL (alleged)	—	(None found.)	—	F. W. Dewhurst.

ENGLAND—continued.					
	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.	
Cumberland.					
19. WYTHORP WOODS, BASSENTH- WAITE	Large (60): 40-50 <i>c.</i> 1872.	<i>c.</i> 1914-18.	Imme- memorial.	R. H. Brown: S. D. Stanley-Dodgson: (Mac- pherson and Duckworth): (Harting): (Yarrell, 3rd Ed.): (Bonnett).	
20. NR. GREEN ROAD RAIL- WAY STATION	Usually a few:· none 1928.	1927 (?).	—	Viscount Cross.	
21. BROADGATE (traditional)	Large.	—	—	"	
22. PAPER MILL PLANTATION, COCKERMOUTH	A few.	1927 (?).	—	S. D. Stanley-Dodgson.	
23. LORTON HALL	1-4.	1927.	<i>c.</i> 1908.	" " "	
24. COOMBE WOOD, ARMATHWAITE	6 in 1902 & 1906.	1927 or earlier.	Before <i>c.</i> 1890.	E. Blezard: L. E. Hope.	
25. BRAEMAR WOOD, ENNERDALE	Average (<i>c.</i> 1904- 14) 12.	1914.	—	J. Sewell.	
26. 'DERWENT- WATER'	(? predecessor of Manesty.)	(Within memory.)	—	G. Bolam.	
27. STAFFORD WOOD, NR. GREYSTONE (Distinct from No. 16)	16	Pre-war.	? from Eamont?	Mrs. F. Leyborne Pop- ham.	
28. GOWBARROW, OR GOBAY PARK, ULLSWATER	—	—	Ancient.	(Yarrell, 1st Ed.): (Latham).	
29. EAMONT RIVER, NR. ULLSWATER	—	—	? from last?	(Macpherson and Duck- worth): (Yarrell, 4th Ed.).	
Derbyshire.					
2. EATON WOOD, NR. DOVERIDGE	Usually 3-4 1890-1921.	<i>c.</i> Most de- serted at felling <i>c.</i> 1890: some stayed till 1921.	Imme- memorial	A. Roebuck: (V.C.H.).	
3. KEDLESTON PARK, NR. DERBY	1 <i>c.</i> 1876: <i>c.</i> 20 in April, 1884: <i>c.</i> 6 about 1893: <i>c.</i> 15 in 1901: usually 4 1902-25: 3 in 1926: 1 in 1927.	1927.	<i>c.</i> 1876.	A. Roebuck: F. C. R. Jourdain: (V.C.H.): (Yar- rell, 4th Ed.): (Whitlock).	
4. LONGFORD CARR (2 sites)	1-2 in 1902-3: 2-4 up to 1920: 1-2 up to <i>c.</i> 1924-5: 1 in 1926.	(a) 1920. (b) 1926.	Prob. <i>c.</i> 1900.	A. Roebuck: F. C. R. Jourdain.	
5. HADDON HALL, NR. BAKEWELL	Odd nests from time to time.	'None in recent yrs.'	?	A. Roebuck.	
6. HOPE VALLEY	Odd pairs.	—	—		
7. HOPTON HALL, NR. WIRKSWORTH	1 pair regularly.	1922.	?	"	
8. SUTTON SCARSDALE, NR. CHESTERFIELD	<i>c.</i> 20 in April, 1884.	Before 1893.	Imme- memorial.	(Whitlock): (Yarrell, 4th Ed.).	
9. SHACKLOW, NR. ASHFORD	2-3 in 1925.	1925 or 1926.	1925.	W. Shipton.	

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Derbyshire—<i>continued</i>				
10. CLIFTON	1 in 1898 or 1899.	—	—	F. C. R. Jourdain.
Devon.				
18. KITLEY	—	Before 1918 to Puslinch.	—	V. C. Wynne-Edwards.
19. DITSWORTHY WARREN, R. PLYM	1 in 1925.	—	—	" " "
20. SLAPTON LEY	1 c. 1918.	None now.	—	Miss A. M. Allen, per B. W. Tucker: V. C. Wynne-Edwards.
21. KINGSWOOD, BISHOP- STEYNTON	Several?	None now.	—	H. Whitley.
22. PRIMLEY, PAIGNTON	1 'a few yrs. ago.'	—	—	"
23. POWDERHAM CASTLE	± 40-50.	1910 to Starcross.	Ancient.	W. Walmesley White.
24. COFTON, DAWLISH	14.	Before 1870.	—	
25. SHUTE, NR. AXMINSTER	—	1850 to Sted- combe.	Ancient (?).	W. Walmesley White.
26. WOODS NR. TOTNES	'Single pairs.	After 1872.	Before 1851.	(Naturalist, 1851): (Harting, 1872).
27. WOOD OPP. ILTON CASTLE	? offshoot of Hall- well (<i>q.v.</i>).	„	—	(Harting, 1872).

Dorset.

5. BRANKSEA ISLAND	± 50 c. 1855.	c. 1855.	Before 1834.	(Blathwayt).
6. DEWLISH	—	Before 1850.	—	(Naturalist, 1851): (Blathwayt).
7. ADMISTON HALL	Small' (1851).	Before c. 1888	? from Dewlish.	(Naturalist, 1851): (Blathwayt).
8. UPTON, NR. WIMBORNE	—	„	—	(Yarrell, 3rd Ed.): (Blathwayt).
9. DUDDLE HEATH, FORDINGTON	2-3 c. 1888: 20 + formerly: ± 12 c. 1915.	1918.	Before 1878: shifted c. 1915.	(Blathwayt)): (Mansel- Pleydell).
10. MORETON PLANTATION	A few.'	1918.	1915.	(Blathwayt).
11. BRYANSTON PARK	—	c. 1885.	Before 1851.	(Naturalist, 1851): (Blathwayt.)
12. ST. GILES PARK	(? offshoot of Crichel.)	—	Before 1888.	(Blathwayt): (Mansel- Pleydell).
13. GOATHORN (OR GOATHAM) WOOD	'A few.'	?	Before 1888.	(Mansel-Pleydell): (Blathwayt).

Durham.

2. RAVENSWORTH CASTLE	—	c. 1850-55.	Ancient.	Bentley Beetham: (Yar- rell, 1st Ed.): (Macpher- son).
3. SANDS HALL, SEDFIELD	—	Probably be- tween c. 1840 and 1852.	—	Bentley Beetham: (V.C.H.): (Naturalist, 1852).

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Essex.				
7. HERONRY WOOD, BRIGHTLINGSEA (parent of St. Osyth & Birch)	100 + c. 1840 or earlier: \pm 30 in 1870: 15-18 in 1871.	1872: (2nd time) 1893.	Imme- morial: refounded 1892.	W. E. Glegg: (Miller Christy). W. E. Glegg.
8. (LORD DACRE'S PARK), AVELEY	(Presumably large).	Before 1768.	—	(Hasted, History of Kent): (Miller Christy).
9. MUNDON (origi- nal attempt)	1 c. 1880: 3 c. 1883.	Before 1890.	1880 (?).	(Miller Christy).
10. BOWER HALL GROVE, MERSEA ISLAND	12-15.	c. 1850.	—	"
[11. GOLDHANGER	Alleged site.	No heronry.	—	Rev. G. A. Bunbury.]
Gloucestershire.				
2. SIDDINGTON	2-3 c. 50 years ago.	—	—	H. Norris, per E. M. Nicholson.
3. WINDRUSH VILLAGE	}	Extinct at least 20 yrs., if ever existing.	—	Miss H. E. Donovan.
4. ODDINGTON, NR. STOW-IN- THE-WOLD				
5. SHERBORNE PARK				
6. NR. BOURTON- ON-THE- WATER	"1 or 2 solitary nests in last few years." (1 in 1927.)		—	Miss H. E. Donovan.
7. CIRENCESTER PARK	1, 1895.	—	—	(Mellersh.) This record has been investigated and found erroneous by H. Norris.
8. WOODCHESTER PARK	Nested within period 1872-92.	—	—	(Witchell and Strugnell).
Hampshire.				
9. "THE HERONRY," HURSTBOURNE	Never any nests here.	—	—	F. W. Hornsby, per M. Portal.
10. DEERLEAP ENCLOSURE, COLBURY	1 only c. 20 years ago.	—	—	R. E. Coles.
11. OLD BURLEY WOOD	—	To next.	?	(Wise.)
12. WOODFIDLEY	—	"	?	"
13. DENNY WOOD	—	c. 1855 (?) to next.	?	(Morris): (Wise).
14. VINNEY RIDGE	50 + in 1861: 2 in 1890: 3-4 in 1895: 8-9 in 1895: \pm 6 c. 1901: 4-5 in 1904: 1 till 1924.	1924.	c. 1855 (?) shifted c. 1895.	R.E.Coles: H.F.Witherby (V.C.H.): (Kelsall and Munn): (Wise).
15. BOLDREWOOD	Small.	Before 1860.	c. 1850 (?)	
16. "NR. LONGPARISH	3 in 1901.	1901 or later.	1898 or earlier.	(Kelsall & Munn).
17. PARKHURST FOREST (I.O.W.)	3-4.	Extant 1888.	—	" "

ENGLAND—continued.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Hampshire—continued.				
18. HERON COURT	Occasional odd nests recently: once large.	Probably before c. 1840.	Probably ancient.	Lord Malmesbury, per Sir T. H. C. Troubridge: (Naturalist, 1851).
19. MOTTISFONT	± 3-13 c. 1900.	Some years ago.	—	G. Edwards, per Sir T. H. C. Troubridge: C. T. Dalgety: <i>E. Rawlence</i> , per L. Hinxman.
20. WOLMER FOREST	8-10 in 1872: ± 20 c. 1897.	1917.	c. 1868.	Lord Selborne, per M. Portal: (Kelsall and Munn): (Harting, 1872).
21. ELVETHAM (1st colony)	4-5 for some years.	1916.	?	T. L. Williams: J. Rudge Harding.
22. SIM'S WOOD, BEAULIEU	—	Late XIX. century.	—	R. E. Coles: (Kelsall and Munn).
23. 1 MILE FROM WINCHESTER	A few: 1 year only.	Before 1900.	—	Miss E. M. Williams, per E. M. Nicholson.
24. BROOM WOOD, SWANMORE	2-3 c. 30 years ago.	—	Offshoot of Wickham (?)	M. Portal.
25. OTTERBOURNE (a) Shawford Park (b) Cranbury	—	None now. Formerly.	Extant 1888-89. —	R. Roundell, per M. Portal Miss E. M. Williams, per E. M. Nicholson.
26. BEMBRIDGE, I.O.W.	1 for several years.	?	1920 (?).	J. M. Goodall.
[27. ALRESFORD	—	No heronry	—	— Schwerdt and H. Brownlow, per M. Portal.]
Herefordshire.				
4. GOODRICH	1-2.	1926-7.	—	R. Pashley.
5. CASTLE GREEN, BREDWARDINE (MOCCAS)	6 in 1899: 8 in 1911.	1912.	?	H. A. Gilbert: (V.C.H.) G. Powell, per Sir C. Venables-Llewelyn, Bt.
6. BURFA WOOD, NR. KNILL	4 in 1899.	{ Long ago.	—	E. D. C. Clark: (V.C.H.).
7. GARDEN WOOD, EYWOOD	3 in 1899.			
8. HAWKSWOOD, THE MOOR, NR. HAY	Very large up to c. 1852: ± 12 in 1856: 1 in 1862-3.	1863.	Immemorial.	(Bull): (Naturalist, 1851) (Yarrell, 4th Ed.).
9. NR. LEDBURY (a) Canon-Frome Court (b) Meep Hill and Childerwood	(a) 1 in 1881: 5-8 in 1899: ± 6 usually: 2 in 1912. (b) 1 in 1899 (?): 15-20 (?) c. 1903.	(a) 1912-13. (b) 1908.	(a) c. 1881-98. „	(a) J. Hopton, per S. H. Rickman. P. W. Taylor: H. A. Gilbert.
10. NEWCOURT, LUGWARDINE	Large before 1850.	1853 or later.	—	(Bull).
11. DINEDOR HILL	6 (before 1912).	'Some yrs. ago.'	—	E. D. C. Clark: (Bonnett).
12. LETTON-ON-THE WYE	2-3 c. 1880: 5 in 1884-5: 2 in 1899: 8 c. 1900.	'Years ago.'	1880 or earlier.	H. A. Gilbert: R. J. Lee: E. D. C. Clark (V.C.H.): (Bull).
13. BRINSOP	1.	1927.	1926.	H. A. Gilbert.
14. LOCKSTERS POOL, CLIFFORD.	1.	1927.	1927.	„ „
15. SHOBDON MARSHES	1.	No trace now.	—	H. A. Gilbert: E. D. C. Clark.

ENGLAND—continued.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Herefordshire—continued.				
16. WILLEY LODGE, NR. LINGEN	100 +.	1836 (to Plowden, Salop?)	Ancient.	(Bull).
Hertfordshire.				
1. GROVE PARK, WATFORD	1 in 1901.	—	—	W. Bickerton: C. Oldham.
Huntingdon.				
3. SOUTHLOE WOOD (NR. DIDDINGTON)	2.	1894: not allowed to remain.	1894.	A. E. Lees.
4. NR. GODMAN- CHESTER (Hemingford Park, 1 mile)	1.	Disturbed and did not return again.	c. 1918.	„ „
5. PAXTON WOOD, NR. ST. NEOTS	'Small.	c. 1916.	Flourished 'for many years.'	J. S. Addington.
Kent.				
7. YANTLET, ISLE OF GRAIN	6-9 in 1914 or 1915.	1914-15.	Imme- morial.	G. J. Scholey.
8. PENSHURST	Considerable c. 1801.	c. 1810.	—	(Ticehurst).
9. HERON WOOD, NR. APPLIEDORE	Small (1896).	c. 1908 (?).	—	N. F. Ticehurst: (Zoo- logist, 1896).
10. IGHTHAM	—	Many years ago (1906).	—	(Ticehurst).
11. KELSEY MANOR, BECKENHAM	'1-2 annually.'	1873 or later.	—	(Zoologist, 1873).
12. WITTERSHAM	3.	c. 1894.	c. 1894.	(Ticehurst).
13. THE HOLM- STONE, DUNGENESS	'Not inconsider- able' before c. 1800: 1 nr. in 1907 and 1908.	Before 1830-40 (?).	Ancient.	„
Lancashire.				
9. LEIGHTON MOSS, NR. SILVERDALE	3-4 in 1923.	—	1923 (?) prob. from Dallam Tower.	A. W. Boyd.
10. KEMPLE END, LONGRIDGE FELL	± 10 in 1920.	1921.	?	„
11. ROUDSEA WOOD, NR. HAVERTH- WAITE	10-12 before 1890.	Before c. 1890 (?) to Holker.	Shifted 1886.	(Macpherson): (Mitchell).
12. WHITTINGTON, NR. KIRKBY LONSDALE	7 in 1888.	? to Tun- stall.	?	(Macpherson).
13. AUGERTON MOSS, FURNESS	A few in some years.	—	—	Viscount Cross.
14. RIGGS WOOD, RAWCLIFFE	± 22 c. 1853.	—	—	(Naturalist, 1855).
Leicestershire.				
2. MARTINSHAW WOOD, NR. LEICESTER	Probably small.	1840.	?	W. E. Mayes.
3. MERE HILL WOOD, NR. COLETON, LOUGHBOROUGH	1-2 c. 1815.	—	?	(Macgillivray).

ENGLAND—*continued*.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority
Leicestershire — <i>continued</i> .				
4. BOSWORTH PARK	1 for some years.	Fl. within period <i>c.</i> 1860-80?		(Montagu Browne).
5. BELVOIR	1 'for several seasons.'	—	Before 1886.	" "
6. QUORN	<i>c.</i> 2-3 at most.	<i>c.</i> 1924-5.	?	Eric Pochin, per Miss O. S. Wilshire.

Lincolnshire.

9. CRESSY HALL, SURFLEET	Over 80 on one oak in 1769 (June 27-28).	1792.	Ancient.	J. W. Glead and W. A. Cragg, per J. S. Reeve: (Pennant): <i>John Cragg</i> MS.): (Harting, 1872.)
10. CAWOOD HALL, GOSBERTON	—	<i>c.</i> 1793-4.	<i>c.</i> 1792-3.	
11. DONINGTON WYKES	—	'Long since,' 1872.	<i>c.</i> 1794.	
12. LEVERTON	—	—	—	
13. BROUGHTON (or MANBY), NR. BRIGG	± 80 <i>c.</i> 1860: 'Reduced from 30 to 7 by 1884.'	To Appleby (<i>q.v.</i>).	Immemorial.	(Yarrell, 1st Ed.): (Bonnett): W. C. Brown, per H. F. Allison.
14. TOTHILL WOOD	? 20 <i>c.</i> 1908: 14 before 1911.	<i>c.</i> 1911.	<i>c.</i> 1870.	Major Rawnsley, per J. S. Reeve: (Zoologist, 1908): (Bonnett).
15. LEADENHAM-FULBECK	1 in 1921, and 1925-7: 14 before 1900 (?).	1927.	1921.	J. S. Reeve.
16. NEWBALL WOOD, LANGWORTH	6-7 annually. <i>c.</i> 1902-8: 10 before 1912.	—	Before 1900.	(Bonnett): (Zoologist, 1908).
17. STANIFIELD WOOD, NR. BARDNEY	—	?	?	(Bonnett).
18. SWANPOOL	—	?	Prob. offshoot of Skellingthorpe.	(Yarrell, 3rd Ed.): (Morris).

Middlesex.

1. OSTERLEY PARK	'A very fair heronry' in XVIth Century.	Prob. before 1872: certainly by <i>c.</i> 1884-88.	Before <i>c.</i> 1550.	H. A. Littlejohn (London Natural History Society): (Norden): (Yarrell, 4th Ed.): (Harting, 1872).
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Monmouth.

4. TREOWEN, NR. MONMOUTH	18 in 1870 (April).	<i>c.</i> 1913.	—	Lord Treowen, per A. L. Tatham: (Zoologist, 1873).
5. PENTWYN, NR. GROS MONT	4 in 1925.	1927 (?)	—	H. A. Gilbert.
6. PANTYGOYTRY, NR. ABERGAVENNY	(Small <i>c.</i> 1855): 1 1920-27.	1927.	Immemorial.	A. L. Tatham: (Naturalist, 1855).
7. NANTOER, NR. ABERGAVENNY	2	1924.	<i>c.</i> 1914-17.	A. L. Tatham.
8. VACHWALL WOOD, LLANMARTIN	—	Before 1914 (?) to Pwll-head	—	A. Silver.
9. CALDICOT OF ROGGIET	1-2.	—	Offshoot of last.	"
10. RUPPERRA CASTLE	A few.	? before 1918.	—	H. J. Lovelock: G. C. S. Ingram.
11. COURT BLETHYN	Large <i>c.</i> 1855.	—	—	(Naturalist, 1855).

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Norfolk.				
20. BRESSINGHAM HALL, NR. DISS	1 in 1924.	c. 1925-7	1924 (?).	B. B. Riviere: (Riviere).
21. ACLE	—	c. 1810 (to Keswick?).	Ancient.	(Riviere).
22. COSSEY OR COSTESSEY, NR. NORWICH	± 60 in 1866: (1 c. 1911.)	Before 1872.	c. 1860 from Earlham.	(Stevenson): (Bonnett): (Zoologist, 1872).
23. EARLHAM, NR. NORWICH	± 80-100 mid- XIX. Cent.: 2-3 in 1866: 16-17 in 1868: 26 in 1871: 25 in 1883: 28-30 in 1874: 7 in 1903: 0 in 1907: 2 in 1911: 4 in 1917: 7 in 1918- 19: 4 in 1921: 1 in 1924: 4-5 in 1925.	c. 1926-7.	After 1830.	B. B. Riviere: (Riviere): (Zoologist, 1874): (Yar- rell, 4th Ed.): (<i>antea</i> , XI., 253).
24. KESWICK, NR. NORWICH	(1 in 1874-5.)	c. 1829-30 to Taver- ham.	c. 1810 (? from Acle.)	(Zoologist, 1874-5): (Riviere).
25. SPIXWORTH, NR. NORWICH	—	—	—	(Yarrell, 4th Ed.).
26. TAVERHAM, NR. NORWICH	± 20.	After 1872 (?).	1830 from Keswick.	(Harting, 1872).
27. DIDDLINGTON, NR. MUNDFORD	60-70 in 1868: 70 in 1883: 5-6 c. 1913-23.	1924.	Shifted c. 1858.	B. B. Riviere: (Riviere): (Yarrell, 1st and 4th Ed.)
28. OLD BUCKEN- HAM, NR. ATTLEBOROUGH	1-2 c. 1870: 6 c. 1884.	Before 1911.	1864.	(Stevenson).
29. STRUMPSHAW, NR. BRUNDALL	'Small.'	—	c. 1882-3.	(Zoologist, 1883): (Yar- rell, 4th Ed.).
30. WOLFERTON WOOD (BABINGLEY WOOD), NR. CASTLE RISING	20 in 1868: ± 40 annually c. 1870- 79: 12 before 1912: 4-5 in 1924: finally 2-3.	1924.	Ancient.	B. B. Riviere: (Riviere): (Bonnett): (Lubbock).
31. CLAXTON, NR. REEDHAM	—	c. 1866.	Ancient (?).	(Stevenson): (Browne).
32. REEDHAM (1st colony— on present site)	—	Before 1870.	—	(Zoologist, 1905): (Browne).
33. NORTON HALL, NR. REEDHAM	—	c. 1850-60.	—	(Stevenson): (Harting, 1872).
34. CLIPPESBY, NR. ACLE	'Rather consider- able.'	1834.	—	(Stevenson).
35. THRIGBY, NR. ACLE	± 6 c. 1839.	c. 1840-60.	—	(Harting, 1872).
36. 100-ACRE PLANTATION, WEYBOURNE	—	Extant c. 1881-2.	—	(Pashley).
37. BAYFIELD HALL, NR. HOLT	—	c. 1881-2.	—	„

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Norfolk—<i>continued.</i>				
38. RANWORTH (1st colony)	—	* Formerly (1872).	—	(Zoologist, 1872).
39. WESTACRE, NR. NARFORD	—	—	—	(Yarrell, 4th Ed.).
40. WATLINGTON PARK, NR. LYNN	9 in 1879.	?	c. 1860-70 or earlier.	(Lubbock).
41. BILLINGFORD, NR. DISS	—	—	—	(Yarrell, 4th Ed.).
41. SOMERTON, NR. POTTER HEIGHAM	1.	Before 1911.	—	(Bonnett).
43. WHEATACRE, NR. BECCLES	2-3 c. 1911.	—	—	„
Northamptonshire.				
6. WHITTLESEA MERE	Small.	Before c. 1850 (?).	—	G. W. Fitzwilliam.
7. LODGE COPPICE, HARRINGWORTH	—	Before 1850 to Bulwick	?	(Lilford): (Macgillivray).
8. MARES WOOD, BULWICK	± 30 before 1850: 1 in 1872: maxi- mum c. 60.	c. 1873-4.	Before 1850.	(Harting, 1872): (Lil- ford): (Naturalist, 1853)
9. COLLYWESTON WOOD	1.	An abortive effort	1927.	L. Tebbutt.
Northumberland.				
9. BOLAM	—	c. 1913.	—	F. B. Atkinson: (Bolam).
10. UNTHANK, SOUTH TYNE	10-12 c. 1873.	After 1912 (?).	—	(Bolam): (Hancock).
11. CHIPCHASE, NR. BELLINGHAM	—	?	Before 1620.	(Macpherson).
12. HOWICK	—	After 1911 (?).	Imme- morial.	(Bolam).
13. DIPTON WOOD, NR. R. TYNE	—	1909.	—	W. S. A. Warde-Aldam.
14. HIGH KELLAS PLANTATION, HEALEY HALL	2 in 1909: 3 in 1926: 7 maxi- mum.	1926.	1909 from Dipton Wood.	
15. HARBOTTLE	± 20 c. 1873.	c. 1914-18 (?).	Imme- morial.	T. Robson: (Hancock): (Bolam).
16. WOODHALL, NR. HOLYSTONE	2 in 1927.	(No inf. 1928).	1927 or earlier.	R. Telfer, per A. Chap- man.
17. BLACK BLAKEHOPE- BURNHAUGH	± 20 c. 50 years ago: 4-10 for past 30 years.	Lately.	Imme- morial.	R. Telfer, per A. Chap- man: T. Robson.
18. WOODHILL, NR. OTTERBURN	1.	1926.	1926.	R. Telfer, per A. Chap- man.
19. MEADOWHAUGH, NR. OTTERBURN	2-3 c. 1926.	—	—	„ „ „ „
20. WHICKHOPE MOOR	—	c. 1922.	—	R. Clapperton, per A. Chapman
21. HOUSTY	6-8 annually: 12 + c. 1914.	1916.	Before 1900.	A. Chapman.

ENGLAND—*continued*.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Nottinghamshire.				
7. NEWSTEAD ABBEY	1-2 before 1912.	None now.	?	Miss F. K. Staunton: (Bonnett).
8. THORESBY PARK (1st colony)	Always 4-5 before 1856.	1856.	Probably ancient.	(Sterland and Whitaker): (Sterland).
9. CLUMBER (1st colony)	'Large.'	c. 1883-86.	Probably ancient.	F. B. Hawkins: (Ster- land and Whitaker).
10. BARTON FERRY (Notts side)	'Small' c. 1893.	—	—	(Whitlock).
Oxfordshire.				
2. OLD PADDOCK WOOD, RYCOTE, NR. THAME	± 20 in 1899 (May 19).	1909.	Imme- morial.	Oxford Ornith. Soc.— B. W. Tucker: E. M. Nicholson: <i>G. Tickner</i> : <i>F. L. Blathwayt</i> : (Aplin): (Zoologist, 1913).
3. TAR WOOD, SOUTH LEIGH	30-60 in mid- XIXth Cent.: 5-6 in 1872 (March): 26 in 1881-2.	1885.	Ancient.	Oxford Ornith. Soc.— <i>B. D. Nicholson</i> : <i>S. D.</i> <i>Facey</i> : <i>W. S. Crocker</i> : (Aplin): (Harting, 1872).
4. FRIAR'S COURT, CLANFIELD, NR. BAMPTON	? Small.	Undoub- tedly long extinct.	Extant c. 1888.	Oxford Ornith. Soc.— B. W. Tucker and E. M. Nicholson: (Aplin).
5. NR. SONNING (OXFORD BANK)	1 in 1917.	—	—	F. C. R. Jourdain
[6. CLATTERCOTE (alleged)]	No signs of breeding locally: certainly no longer extant, if ever.			E. M. Nicholson.]
Rutland.				
1. BURLEY	1 c. 1830.	—	—	(V.C.H.) Montagu Browne.]
[No heronry in County, 1889]				
Shropshire.				
4. ATTINGHAM, NR. SHREWSBURY	Usually 22 before 1879.	c. 1912.	Imme- morial.	Lord Berwick: H. E. Forrest: (V.C.H.): (Yarrell, 4th Ed.)
5. OAKLEY PARK, BROMFIELD, LUDLOW	Usually 15 before 1879: 10-16 c. 1911 or earlier: 'a few' pre-war.	c. 1914-18.	—	C. H. Woodhouse: H. E. Forrest: (V.C.H.): (Yarrell, 4th Ed.): (Bonnett).
6. ELLESMERE MERE	—	Long be- fore 1900.	—	(V.C.H.): (Yarrell, 1st and 4th Ed.).
7. COLEMERE	—	After 1900.	—	(V.C.H.): (Forrest, 1899).
8. CLUN	—	Extinct for years.	—	C. H. Woodhouse.
9. LLANHEDRICK (offshoot of WALCOT)	1-2.	Before 1928.	c. 1921-24.	Lord Powis: H. Lynes.
10. SKYBORRY, LLANFAIR- WATERDINE, NR. KNIGHTON	1.	1915.	1913.	O. R. Owen.
Somerset.				
12. MELCOMBE WOOD, MELLS PARK, (1st colony)	1 in 1891: 2 in 1892: 5 in 1893: 5 — afterwards.	1906.	1891: probably from Longleat (Wilts.).	B. W. Tucker.
(2nd colony)	(1 in 1914): 3 in 1922: 1 in 1923.	1923.	1922 or before.	..

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Somerset—<i>continued.</i>				
13. BALL COPSE, KNOWLE, NR. DUNSTER	± 30 in 1872: 16 in 1885: 6-8 an- nually c. 1888- 1908: ± 6 in 1903: ± 4 1903-12.	1912.	c. 1858.	B. W. Tucker: (Wiglesworth): (Harting, 1872): (D'Urban and Mathew): (Zoologist, 1908).
14. AVILL BALL, NR. KNOWLE	3-4 in 1917.	1917.	1917 (?) (from Ball Copse?)	B. W. Tucker: (Wiglesworth).
15. CONYGAR TOWER WOOD, DUNSTER	3 in 1919: 2 in 1920.	1920.	1919 or earlier.	R. J. Clough, per B. W. Tucker.
16. GRABBIST, NR. DUNSTER	1 in several recent seasons.	1927 earlier.	or c. 1923.	B. W. Tucker.
17. LOWER MEAD COPSE, BLUE ANCHOR	1 in more than one year.	„	—	„
18. ANOTHER COPSE NR. CARIHAMPTON	1 for 2-3 years.	„	1923 (?).	„
19. COSSINGTON	'Small.'	—	—	(Wiglesworth): (Bonnett).
20. CHARD	2 in 1913.	1913.	1913.	(Wiglesworth).
21. CHRISTON, NR. WINScombe	1 in 1919.	1919.	1919.	Wiglesworth MS., per B. W. Tucker.
22. BUTLEIGH WOOD, NR. STREET	5-6 before c. 1860: (2 c. 1911): (1 c. 1912).	c. 1863 (?).	c. 1850 or earlier.	J. Clarke, per B. W. Tucker (Previously unrecorded): E. Page.
23. WARLEIGH, NR. BATH	1-2 for some yrs.	c. 1910-20 (?).	c. 1890 or earlier (?).	J. Penrose: B. W. Tucker.
24. CLAVERTON, NR. BATH	1 annually.	c. 1916.	?	B. W. Tucker: T. Jefferies.
25. UPHILL	1 in 1923.	1923 (?).	1923 (?).	B. W. Tucker.
26. SHIPLETT OR SHIPLATE	1 for several years.	1923.	Before 1920.	„
Suffolk.				
10. ORWELL PARK	60-70 + in 1872: nearly 50 c. 1890- 95: 6 in 1903.	c. 1904-07 to Nacton	1871 from Woolverstone.	E. G. Pretyman: (Yarrell, 4th Ed.): (Babington).
11. WOOLVERSTONE PARK	—	1870-71 to Orwell Park.	Before 1600.	E. G. Pretyman: (Babington): (Zoologist, 1872).
12. BLYTHBURGH LODGE	—	'Long ex- tinct.'	—	E. Cooper: Mrs. E. Clodd.
13. HENHAM HALL, NR. BLYTHBURGH	—	Beyond living memory.	Certainly extant 1848.	C. E. Alford: (Naturalist, 1852).
14. A FARM NR. REYDON	—	'25 years ago.'	Probably from Hen- ham.	C. E. Alford.
15. 100-ACRE WOOD, TANGHAM	± 15.	1919.	Probably c. 1912-14 from Tangham Forest.	B. J. Ringrose.
16. TANGHAM FOREST	± 20.	c. 1912-14.	?	B. J. Ringrose: C. B. Ticehurst.

ENGLAND—*continued.*

ENGLAND—continued.	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Suffolk—continued.				
17. SCOTS HALL, MINSMERE	1 in 1927: (1 odd nest long ago).	(No inf. 1928.)	—	Miss R. Anderson, per Mrs. E. Clodd.
18. BARNBY OR BARNABY BROAD	1-2 in 1915: 3-4 c. 1917-19.	c. 1917-19.	1915 (?)	C. B. Ticehurst: Miss F. K. Staunton.
19. TAILOR'S GROVE, HONINGTON	1-2 'for years.'	'Some yrs. ago.'	—	—, per Miss E. L. Turner.
20. EUSTON PARK	1-2 in 1926.	1926-7.	From Honington.	C. B. Ticehurst: Miss E. L. Turner.
21. CHIMNEY MILLS	—	Extant 1902.	—	(V.C.H.).
22. HERRINGFLEET	—	c. 1869-72.	—	C. B. Ticehurst: (Babington): (Harting, 1872): (Lubbock).
23. BARSHAM OLD HALL	1-2.	Long ex- tinct.	Before c. 1880 from Herring- fleet.	C. B. Ticehurst: (Babington).
24. NORTH OR NORTH COVE, NR. BECCLES	'A few': 2-3 be- fore 1912.	c. 1913 (?).	c. 1909.	C. B. Ticehurst: (Bon- nett).
25. BELTON	1 in 1918.	—	—	C. B. Ticehurst.
26. REDGRAVE HALL, NR. DISS	Odd nests since before 1884: up to c. 1923 (?).	—	—	Lord Playfair: <i>Holt Wil- son</i> , per E. M. Nicholson: (Babington).
27. CAVENHAM	—	No heron- ries trace- able.	Before 1884.	Miss E. L. Turner: (Babington): (Harting, 1872): (Yarrell, 4th Ed.).
28. ICKLINGHAM				
Staffordshire.				
7. PATSHULL PARK	± 10 in 1893: 'Large' when de- stroyed.	c. 1903.	Recent (?)	Hon. H. G. O. Bridgeman: (Bonnett).
8. BETLEY	10-12.	1878.	—	T. Smith, per J. R. B. Masefield: <i>Yarrell</i> , 4th Ed.: V.C.H.
9. DOVEDALE (Staffs. side of river)	1 in 1915.	—	—	F. C. R. Jourdain: E. Grindey.
10. RAMSOR WOODS	1 several years.	Before 1900.	—	F. C. R. Jourdain.
Surrey.				
6. COBHAM PARK	—	c. 1880 or earlier.	Before 1852.	C. H. Combe, per London N.H.S.: (Bucknill): (Nat- uralist, 1852).
7. PEPER HAROW	2-4.	1910.	Before 1900.	W. A. Shaw: Mrs. L. E. Taylor: (Bucknill).
8. NORWOOD	Small.	Extant c. 1850.	—	(Bucknill).
9. ASHLEY PARK*	—	c. 1872-95.	Before 1843.	(Yarrell, 1st-4th Ed.): (Bucknill).
10. OATLANDS PARK*	—	Probably c. 1856.	—	(Meyer): (Morris): (Yarrell, 3rd Ed.): (Bucknill): (Harting, 1866).

[*Ashley and Oatlands Parks adjoin: this is probably a case of alternative sites of the same colony, or an offshoot.]

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Sussex.				
6. PLASHETT PARK, LEWES	3 in 1907: 4-5 in 1908: 1 <i>c.</i> 1911: 20-25 in 1923.	<i>c.</i> 1926.	1907.	E. J. Bedford: N. F. Ticehurst: (Bonnett).
7. IDEN WOOD, PEASMARSH	± 11 <i>c.</i> 1892-5: 11 in 1896.	1896 or soon after.	<i>c.</i> 1891-2.	D. D. Godfrey and E. F. Wood: (Zoologist, 1896).
8. FOLKINGTON WOOD, POLEGATE	'A few nests.'	After 1853.	—	(Borrer).
9. HAMPDEN PARK, EASTBOURNE	Always 1-2: 2 in 1918.	1918.	<i>c.</i> 1910-13.	R. Morris.
10. WESTWOOD & HASELETTE, E. DEAN	—	Before 1570.	—	(Zoologist, 1877).
11. MICHEL GROVE	—	<i>c.</i> 1826-32. to Parham.	<i>c.</i> 1810.	(Horsfield).
[12. PORTS GHYLL WOOD, UDIMORE	Non-existent.	—	—	A. N. Holmes, per N. F. Ticehurst: (Bonnett).]
Warwickshire.				
6. NEWBOLD REVEL, STRETTON	1 usually.	1927 (?).	—	R. M. Carey.
7. PACKINGTON HALL, NR. COVENTRY	—	'Some yrs. ago.'	—	Agent, per P. K. Chance.
8. DEBDALE WOOD, LONG ITCHINGTON	1 in 1927 (?).	1927.	1927.	P. K. Chance.
9. TRICKLEY COPPICE, MIDDLETON	4 in 1878: 6 in 1879: ± 12 in 1880: 2-3 <i>c.</i> 1883- 90: 13 maximum.	<i>c.</i> 1890.	Before 1852: shifted 1875 and <i>c.</i> 1885.	(Zoologist, 1902).
Westmorland.				
3. RYDAL	± 3-4 <i>c.</i> 1862: more previously.	<i>c.</i> 1872-4.	'Recently' in 1829.	A. Astley: (Gough): (Macpherson).
4. MIDDLETON WOODS, NR. SEDBERGH	± 20: (1 in 1921).	<i>c.</i> 1915.	—	F. S. Chapman: A. A. Duncan: E. M. Nichol- son.
5. KILLINGTON RESERVOIR	6 in 1886.	<i>c.</i> 1890 (?).	<i>c.</i> 1875 (?).	A. A. Duncan: (Mac- pherson).
6. RAMPS HOLME, or BERKSHIRE ISLAND, WINDERMERE	1 in 1852.	—	—	(Naturalist, 1852).
[7. '2 MILES FROM SEDBERGH: E. OF RAWTHEY' (?= Middleton)	± 8.	<i>c.</i> 1901.	<i>c.</i> 1889.	A. A. Duncan.]
Wiltshire.				
8. CODFORD ST. MARY DOWN	2.	Pre-war.	—	— <i>Newall</i> , per M. W. Willson.
9. HEYTESBURY HOUSE	2 <i>c.</i> 1887.	<i>c.</i> 1905-6.	<i>c.</i> 1882-3.	T. Barnard, per S. Lewis: (Smith).

ENGLAND--continued.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Wiltshire--continued.				
10. SHEARWATER LAKE, WARMINSTER (a) Hart Hill Wood (b) Nr. Main road	(a) 3-4 in 1894: 2 in 1912 (March). (b) In 1926.	Intermittent & casual. ,,		S. Lewis. A. Trollope, per S. Lewis.
11. BEDWYN BRAILS, GREAT BEDWYN	3-4.	1870.	?	W. D. Shaw: (Marl- borough Coll. N.H.S. Reports).
12. NOKE WOOD (offshoot of last)	2.	c. 1882.	c. 1878.	(Smith).
13. NR. TOTTENHAM HOUSE, SAVERNAKE (probably an offshoot or alternative site of No. 3)	8-10 in 1894.		—	Lord Ailesbury, per W. D. Shaw.
14. STYPE WOOD, NR. FROXFIELD	2 in 1926.		? from Savernake	W. D. Shaw.
15. WEST WOOD, NR. FYFIELD	1-2 said once to have bred annually.			W. D. Shaw.
16. RED LODGE, BRAYDON	1 in 1919 or 1920.			H. Ward, per E. H. Goddard and J. Penrose.
17. BRITFORD MARSH	3 in 1925.	1925 (?).	—	M. W. Willson.
18. LONGFORD	± 5 c. 1872: 10-12 + in 1875: 4-8 1875-87.	—	Prob. c. 1860-70.	M. W. Willson: (Smith): (Zoologist, 1873): (Yar- rell, 4th Ed.).
19. CROUCH WOOD, HIGHWORTH	60-70 in 1886: 20-30 in 1887.	About 30 years ago.	1878-9.	E. M. Nicholson: (Smith).
20. AMESBURY	2 in 1886.	1887.	1886.	(Smith).
21. ALLENGROVE, BADMINTON	—	Before c. 1880.	—	„
22. EASTON PIERS, OF PERCY	—	c. 1580.	—	„
[BRAYDON POND	No heronry here.	—	—	F. J. Bates, per B. W.] Tucker.

Worcestershire.

2. CROOME	—	Before 1834.	—	(V.C.H.)
3. 'WEDGWOOD' (? WESTWOOD) PARK, DROITWICH (1st colony)	—	—	Before 1872.	(Harting, 1872): (Yar- rell, 4th Ed.).

Yorkshire.

14. HORNSEA MERE (1st colony)	—	Still extant c. 1855.	Before c. 1844.	(Nelson): (Morris).
15. HOUGHTON WOODS, MARKET WEIGHTON	2.	1887.	1887.	E. W. Wade: (Wade).

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Yorkshire—<i>continued.</i>				
16. ENHOLMES, S. HOLDERNESS	2 'about 20 years ago.'	—	—	E. W. Wade: (Wade).
17. BURTON CONSTABLE	1.	1925.	1925.	„ „
18. HOLME-ON- SPALDING MOOR	—	c. 1865-8.	—	R. Fortune: (Nelson): (Zoologist, 1873).
19. SCARBOROUGH, NR. BEVERLEY	'Formerly largest in Yorks.'	Before c. 1830	—	(Nelson): (Morris): Zoo- logist, 1872 and 1873).
20. BESWICK PARK	Isolated nests fre- quently.	After 1906 (?).	Remnant of Scors- borough (q.v.).	(Nelson): (Zoologist, 1873).
21. SUTTON-ON- DERWENT	100 in 1860.	Before 1870.	—	(Zoologist, 1873): (Nelson).
22. HOTHAM, NR. MARKET WEIGHTON	Large.	1819.	—	„ „
23. HUTTON CRANSWICK, NR. DRIFFIELD	(None within mem- ory, 1873).	Perhaps ex- isted before c. 1800.	—	(Yarrell, 1st Ed.): (Latham): (Zoologist, 1873): (Nelson).
24. RED CARR, SCAMPSTON	—	c. 1903 to Scampston	c. 1880-90 from Place Newton.	W. H. St. Quintin.
25. HIGH WOOD, PLACE NEWTON, WINTRINGHAM	60-70 before 1840: ± 20-60 c. 1872.	c. 1880-90 to Red Carr and (?) Wassand.	—	W. H. St. Quintin: (Nelson): (Harting, 1872): (Zoologist, 1873).
26. SCARTHINGWELL, NR. FERRYBRIDGE	18-20.	c. 1837-8.	—	(Nelson): (Morris).
27. HAGG WOOD, HEMSWORTH, NR. PONTEFRACT	—	1859.	—	„ „
28. NOSTELL PRIORY, NR. PONTE- FRACT.	5-6 in 1826: 1-2 before 1850.	c. 1850(?)	— —	(Nelson).
29. WALTON HALL	6-36.	After 1865.	1827.	(Harting, 1872): (Nelson).
30. AZERLEY HALL, NR. RIPON	8 in 1844.	?	?	(Nelson).
31. INGMIRE HALL, NR. SEDBERGH	± 12 c. 1872.	1880.	—	(Nelson): (Harting, 1872): (Macpherson).
32. ALLERTON MAULEVER, NR. KNARES- BOROUGH	—	'Used to build.'	—	Sir E. Brooksbank.
33. RIPLEY PARK	Small.	Before c. 1900 (?).	—	R. Fortune.
34. NR. RAMSGILL, UPPER NIDDESDALE (2 sites)	(a) Small. (b) Small. }	c. 1919.	c. 1915-18.	„
35. BROWSHOLME, NR. CLITHEROE (1st colony) Ditto (2nd colony)	Large. 8 in 1877: 15 in 1880: 16 maxi- mum.	Before c. 1870. 1888.	— 1877.	(Nelson): (Mitchell). F. Hanson: (Nelson): (Mitchell): (Stonyhurst Mag. 1888).

ENGLAND—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Yorkshire—<i>continued.</i>				
36. HARROP HALL, SLAIDBURN	—	?	c. 1890 from Brows- holme.	(Nelson).
37. SWINTON PARK, 3. MASHAM		1902.	1900 (?).	„
38. HUTTON BON- VILLE, NR. NORTHALLERTON	8-10.	?	c. 1900.	(Bonnett).
39. NEWBY WISKE	3 c. 1906.	—	—	(Nelson).
40. KIRBY HALL, NR. BOROUGH- BRIDGE	—	c. 1856.	—	(Yarrell, 1st & 3rd Ed.): (Nelson).
41. KILDALE-IN- CLEVELAND	—	Imme- morial.	—	(Nelson).
42. SWANLAND				
43. WETHERBY GRANGE				

WALES.

Anglesey.

3. PLAS TREGAIAN	8.	1875.	—	Kennedy Orton.
4. DINAM HALL	14 c. 1911 or ear- lier: 3-4 in 1921 or 1922.	1921-22.	Imme- morial.	Kennedy Orton: (Bon- nett).
5. PLAS COEDMOR	1-2.	c. 20 years ago.	—	W. Aspden.
6. SOUTH STACK, HOLYHEAD	'Numbers' before 1838.	Imme- morial.	—	(Forrest).
7. PENRHOS	1 annually.	After 1907 (?).	—	„
8. LLANGEFNI	8.	—	—	„

Breconshire.

7. LLANFECHAN, NR. BUILTH	± 15.	c. 1918.	—	Sir C. Venables-Llewelyn, Bt.: R. W. Woosnam.
8. TYMAWR, NR. GARTH	1.	c. 1924.	? 1918 from Llan- fechan.	R. W. Woosnam: H. A. Gilbert.
9. RED WOOD, GLANWYE	1 'many yrs. ago' nr. existing site.	—	—	H. A. Gilbert.
10. BUCKLAND	'Small.'	? to Gile- stone.	Before 1899.	(Cambridge Phillips).
11. BAILYDDU LLANDILOFAN	—	c. 1875-95 (?).	c. 1870 from Llyn- worm- wood (Carmar- then: ex- tinct).	„ „
12. DINAS, NR. BRECON	2+ last few yrs.	—	—	J. Lloyd, per Sir C. Venables-Llewelyn, Bt.
13. FFWRDGRECH NR. BRECON	3 in 1927 (?).	—	—	J. Lloyd, per Sir C. Venables-Llewelyn, Bt.
14. LOSCOED, NR. DEVYNOKK	'Small.'	—	Before 1899.	(Cambridge Phillips).
15. TREGUNTER, NR. TALGARTH	'A few.'	—	„	„ „

WALES—*continued.*

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Caernarvon.				
8. OGWEN BANK, BETHESDA QUARRY	In 1924: prob. 2 in 1927.	1927.	1924 (?).	W. Aspden.
9. GREAT ORME'S HEAD	—	Imme- morial.	—	(Forrest).
10. BODEGROES. PWLLELI	2.	1927.	—	Kennedy Orton.
11. MADRYN, PWLLELI	1 in 1927.	1927.	—	" "
12. GLAN-Y-GORS, BODFEAN	1 in 1927.	1927.	—	" "
13. GWYNFRYN, CRICCIETH	6-7 c. 1902: 1 in 1926: 2 in 1927.	? 1926.	—	Kennedy Orton: (For- rest): (Zoologist, 1903).
14. GLANGWNA, NR. CAERNARVON	1 in 1926 & 1927.	1927.	'A few years'	Kennedy Orton.
15. TREBORTH	5-6.	c. 1909 to Vaynol.	—	(Forrest, 1919).
16. TYDDYN GWYN, LLANGION	1.	Before 1919?	—	" "
17. NANTFFRANCON	2.	1927.	—	Kennedy Orton.
18. BETWEEN QUELLYN & BEDDGELELT	Small.	Certainly none now.	—	Kennedy Orton: W. Aspden.
Cardigan.				
4. BWLCHBYCHAN, NR. LLANYBYTHER	Always 4-5.	1925.	c. 1887 from High- mead (shifted).	Major H. Davies-Evans.
5. ANTLWYD, LLANRHYSTYD	Usually 3.	1918.	?	W. Miall Jones.
6. GOGERDDAN	—	—	—	(Yarrell, 4th Ed.): (Harting, 1872).
7. LODGE PARK, GLANDYFI	—	—	—	(Bonnett).
Carmarthenshire.				
6. COED, NR. CARMARTHEN	—	c. 1914-18.	Shifted before 1914.	D. E. Stephens.
7. LLWYNWORM- WOOD PARK, NR. LLANDOVERY	Large (?).	c. 1870.	—	(Cambridge Phillips).
Denbighshire.				
4. GARTHMEILIO, NR. CORWEN	1.	—	—	M. V. Wenner, per H. E. Forrest.
5. PONT-Y-GLYN, NR. MAESMOR	1.	—	—	M. V. Wenner, per H. E. Forrest.
6. PENNANT, NR. TALYCAFN	Up to 25.	—	—	Kennedy Orton: (Forrest).
7. CHIRK	—	None known now.	—	A. T. Bellingham: (Bonnett).

WALES—continued.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Flint.				
1. BODRYDDHAN, NR. RHUDDLAN	'Very large' c. 1854 (Sometimes 1 recently.)	Before c. 1900.	—	W. M. Congreve: (Forrest): (Yarrell, 4th Ed.): (Naturalist, 1854).
Glamorgan.				
4. NICHOLASTON WOOD	4.	c. 1915-18.	? offshoot of Pen- rice?	J. R. K. White, per Miss V. Peel.
5. MARGAM	± 20 up to c. 1870: odd nests only since.	Colony ceased c. 60 yrs. ago.: odd nests till 1912.	Imme- morial.	H. E. David, per G. C. S. Ingram: (Naturalist, 1851).
Merioneth.				
4. TALGARTH HALL, PENNAL	± 14 c. 1822-72: 7 c. 1906. (1 in 1927).	c. 1918.	Imme- morial.	O. D. Jones: (Forrest): (Harting, 1872).
5. HENGWRT, NR. DOLGELLY	20 c. 1906.	?	?	(Forrest).
6. GLYN HALL, HARLECH	12 c. 1906.	?	Imme- morial.	(Forrest): (Zoologist, 1873).
7. GLAN LLYN	1-2 c. 1911.	?	Imme- morial.	(Bonnett).
Montgomery.				
3. BETWEEN CEMAES & CEMAES ROAD	4-5 c. 1911.	—	—	(Bonnett): (Forrest).
Pembrokeshire.				
5. SEALYHAM	A few.	Since 1894 ?	?	B. Lloyd and C. Oldham: (Mathew).
6. LINNEY HEAD	6-12.	None now.	Probably before 1861.	B. Lloyd and C. Oldham: (Mathew): (Zoologist, 1861?).
Radnor.				
4. 2 MILES FROM NEWBRIDGE- ON-WYE	1 in 1927.	—	—	Sir C. Venables-Llewe- lyn, Bt.
5. NR. NEWBRIDGE- ON-WYE (another site)	1 in 1927.	—	—	.. .. .
6. STANAGE PARK, KNIGHTON	2-3 c. 1913-18: 3-4 later.	1926.	1912 (?) Shifted c. 1924-5?	C. C. Rogers, per Sir C. Venables-Llewelyn, Bt. O. R. Owen.
7. KINSLEY WOOD, KNIGHTON	2 1913-17: 1 in 1927 (odd nest).	1917.	1913.	O. R. Owen: C. C. Rogers, per Sir C. Venables-Llewelyn, Bt.
Isle of Man.				
INJEDRECK	1 in 1912.	—	—	(Antea, Vol. VII., p. 314):
KIRK PATRICK	1 some years ago.	—	—	P. G. Ralfe.

IRELAND.

	Approximate No. of Nests.	Year of Desertion.	Founded.	Authority.
Co. Mayo,				
20. ACHILL, BALLYCROV AREA	2-3 intermittently: several sites.	—	—	R. F. Ruttledge.
21. CASTLE ISLAND, L. CARRA	1-2 annually: (1 in 1924).	1916.	—	" "
22. STONE ISLAND, L. CARRA	1.	1916.	—	" "
23. PALMERSTOWN, KILLALA	'Large.'	'A good many years ago.'	Imme- morial.	" "
24. CASTLE REA, KILLALA	'Fair-sized.'	?	"	" "
25. BALLYBROOMY, KILLALA	—	'A good many years ago.'	"	" "
26. BALLYSAKEERY, KILLALA	—	"	—	" "
27. ROSS HILL, L. MASK (N.B.: Actu- ally in co. Galway)	'Large.'	1925.	—	" "
28. GLENHEATHER LODGE, MALLARANNY	1.	c. 1919.	c. 1911.	" "
29. MILFORD, KILMAINE	1 in 1924.	1921.	Imme- morial.	R. F. Ruttledge: (Ussher and Warren).
30. CLOON CORMACK, HOLLYMOUNT.	5-6.	'In last few years.'	—	R. F. Ruttledge.
31. BELMULLET CLIFFS	—	Certainly none re- cently.	—	" "
32. OLD HEAD, CLEW BAY	10 c. 1900? : 12 in 1927 (2 groups).	1927.	?	R. F. Ruttledge: (Ussher and Warren).
33. CARNACUN HOUSE, L. CARRA	Up to 6.	c. 1921.	—	R. F. Ruttledge.
34. FISHER HILL, CASTLEBAR	3-4.	Recent.	—	" "
35. NEWBROOK, NR. L. CARRA	'Large.'	c. 1913.	—	" "
36. THE NEALE	2-3 spasmodically.	—	—	" "

SUMMARY OF COUNTIES.

ENGLAND.

County.	Total Acreage.	Number in 1928 of Occupied Sites.	Breeding Pairs.	Acres per nest.	Average size of Colony.
BEDFORDSHIRE ...	302,942	2	20	15,147	10
BERKSHIRE ...	463,830	3	55	8,431	18
BUCKINGHAMSHIRE ...	479,360	4	86-87	c. 5,574	22
CHESHIRE ...	657,950	5	147-149+	c. 4,446	20-30
CORNWALL ...	868,167	6	83-87+	c. 10,214	6-10
CUMBERLAND ...	973,086	18	112-113	7,796	6
DERBYSHIRE ...	650,369	1	1	650,369	1
DEVONSHIRE ...	1,671,364	17	±175-176	c. 9,551	10
DORSET ...	625,612	4	±152	4,116	38
DURHAM ...	649,244	1	11	59,022	11
ESSEX ...	979,532	6	216—	4,535	36
GLOUCESTERSHIRE ...	805,842	1	2	402,921	2
HAMPSHIRE ...	1,053,042	8	±87	12,104	11
HEREFORDSHIRE ...	538,924	3	±28	19,247	9
HUNTINGDONSHIRE ...	233,985	2	17	13,764	8-9
KENT ...	975,965	6	±142-146	c. 6,770	24
LANCASHIRE ...	1,194,555	8	130-135	9,125	10-17
LEICESTERSHIRE ...	532,779	1	11	48,434	11
LINCOLNSHIRE ...	1,705,193	8	150	11,335	10
MONMOUTH ...	349,552	3	26-28	c. 12,046	9
NORFOLK ...	1,315,064	19	331-351	c. 3,856	17-18
NORTHAMPTONSHIRE ...	638,612	5	167	3,824	33
NORTHUMBERLAND ...	1,291,515	8	±48-54	c. 25,324	6-7
NOTTINGHAMSHIRE ...	540,123	6	88-90	c. 6,068	15
OXFORDSHIRE ...	479,220	1	19	25,169	16
SHROPSHIRE ...	861,800	3	±39	22,097	13
SOMERSET ...	1,037,594	11	±273-280	c. 3,759	25
STAFFORDSHIRE ...	741,318	6	±67-70	c. 5,574	11-12
SUFFOLK ...	948,269	9	±171-178	c. 5,450	10-20
SURREY ...	461,833	5	±67-68	c. 6,899	13-14
SUSSEX ...	932,471	5	268-276	c. 3,428	54-55
WARWICKSHIRE ...	605,275	5	±63	9,608	13
WESTMORLAND ...	504,917	2	33	15,301	16
WILTSHIRE ...	864,101	7	±55-60	c. 15,160	8-9
WORCESTERSHIRE ...	458,352	1	23+	19,928	23
YORKSHIRE ...	3,889,432	12 (13)	117-124	c. 32,412	10

WALES.

ANGLESEY ...	176,630	2	9	19,626	5
BRECONSHIRE ...	469,281	6	42-45	c. 10,914	7-8
CAERNARVONSHIRE ...	366,005	7	44	8,318	6
CARDIGAN ...	443,189	3	30-32	c. 14,296	10-11
CARMARTHEN ...	588,472	5	±39-40	c. 15,089	8
DENBIGHSHIRE ...	426,080	3	±30	14,203	10
GLAMORGAN ...	520,456	3	19-20	c. 20,023	6-7
MERIONETH ...	422,372	1 (3)	±4-5	c. 105,593	4-5
MONTGOMERY ...	510,110	2	17-18	c. 30,006	9
PEMBROKESHIRE ...	393,003	4	22-26	c. 16,375	6-7
RADNORSHIRE ...	301,165	3	8	37,646	3

TOTALS.

The total number of occupied Herons' nests enumerated by the census of 1928 was :—

			Minima.		Maxima.
ENGLAND	...	...	3,480	...	3,566
WALES	...	...	264	...	277
IRELAND (part)	...	...	190	...	197
SCOTLAND (in progress)			—	...	—
TOTAL			...	...	...
			3,934	...	4,040

Thus, in England and Wales there were 3,744–3,843 breeding pairs returned on 58,340 square miles. Three English counties—Norfolk, Somerset and Sussex—each exceeded Wales in Heron population, although the combined area of all three of them is not nearly so large. Of the twelve leading counties, ten—all except Cheshire and Lancashire—lie south-east of the familiar line from Gloucester to the Humber, which likewise contains all heronries of above fifty nests, except one—Eaton Hall.

The average size of a colony varies considerably : for England it is about 14 nests, for Wales about 7 and for Ireland about 8. The highest averages occur in the south : in Sussex it is 54–55, in Dorset 38, in Essex 36, while at the other extreme in Cumberland it is 6, in Northumberland 6–7, and in Cornwall, Hereford, Huntingdon, Monmouth and Wiltshire under 10. In Wales, the highest average is 10–11 (Cardigan) and the lowest 3 (Radnor).

PRESENT AND FORMER NUMBERS.

It is commonly believed that the numbers of the Heron in this country have greatly declined within the last two or three hundred years. We have not succeeded in finding any evidence, or even any indications, that this is actually the case, although there was probably a general slight decrease up to about 1860–80. After this period we begin to get definite figures for various counties ; some of these we have abstracted, revising them wherever possible in the light of later knowledge, and we present them here side by side with the 1928 totals as giving some rough, but not seriously questionable, grounds for comparison.

County.	Year.	Number of		1928 Census.		Nests +
		Nests.	Sites.	Nests.	Sites.	or —.
			Occ.		Occ.	
Bedfordshire ...	c. 1901	± 2	1	20	2	+ 18
Berkshire ...	c. 1900	± 50	3	55	3	+ 5
Derbyshire ...	1884	50+	3	1	1	— 49
Essex ...	c. 1890	± 224	4	216—	6	— 8
Gloucestershire	Never above	2–3	recorded.	2	1	—
Herefordshire	1899	21–23	6	± 28	3	+ 5–7

County.	Year.	Number of		1928 Census.		Nests + or —.
		Nests.	Sites. Occ.	Nests.	Sites. Occ.	
Hertfordshire...	Usually	Nil.		Nil.	—	—
Kent ...	c. 1900	±125-185	4	±142-146	6	?
Leicestershire	1884	±40-50	1	11	1	—29-39
Lincolnshire ...	c. 1908	±66	5	150	8	+84
Norfolk ...	1924	370-380	19	331-351	19	—19-49
Northampton- shire ...	1889	±130-160	2	167	5	+7-37
Oxfordshire ...	1899	±20	1	19	1	—1
Somerset ...	c. 1900	Prob. ±100	8	273-280	11	+173-180
Ditto ...	c. 1918	±140-150	10	273-280	11	+123-140
Staffordshire ...	1893	±29	2	±67-70	6	+38-41
Wiltshire ...	c. 1887	±77-97	8	±55-60	7	—17-42
Yorkshire ...	c. 1906	±75	8-9	±117-124	13	+42-49
Merioneth ...	c. 1907	±50	6	±4-5?	1?	—45-46?

It appears, therefore, that the Heron is in some counties decreasing, in others increasing and in others stationary, but that taking the country as a whole, if this is a fairly typical sample of it, the species is holding its own, or even gaining slightly. However, nothing but a repetition of the census in due course can allow such movement of population to be defined. In 1928 there were in England four colonies having a census total of a hundred or more nests; none were returned for Scotland, Wales or Ireland. In addition to these four, the same size is recorded to have been equalled or exceeded in the past at Birch (Essex), Willey Lodge (Hereford), Chilham (Kent), Mautby and Earham (Norfolk), Althorp (Northants.), Halston (Salop), Blackheath (Suffolk), Parham and Windmill Hill (Sussex), and Sutton-on-Derwent (Yorks.). Brede (Sussex), the ancestor of the present Aldershaw heronry, is said to have contained about 400 nests about 1840, which is the largest British figure of which we are aware; Birch and Blackheath are said to have reached about 200 at their maximum.

Of the 216 English sites recorded as occupied in 1928, 16 contain 50 or more nests; 32 have 30 or more; 52 have 20 or more; 108 have 10 or more and 108 have less than 10, these including about 60 below 5, of which 21 are solitary nests.

Of the 39 sites occupied in Wales, only 2 have 20 or more, and 10 have 10 or more, 29 having less than 10, including 18 below 5, of which 5 are solitary nests. Of possibly occupied sites for which no return was procurable we include 3 in England and 2 in Wales.

INDEX TO INFORMATION.

ENGLAND—EXISTING HERONRIES IN ORDER OF SIZE.

(NOTE.—Even the briefest narrative summary of the data available for each heronry would exceed all limits, yet it seems worth putting on record, in addition to the ascertained facts, the localities from which certain evidence has been drawn. This table may, perhaps, be of service to subsequent workers on particular colonies, or groups of colonies. The conventional index is alphabetical, but so many heronries might reasonably be looked for under two or more different names, that without a mass of cross-references no such system could prove anything but an embarrassment. It has therefore been thought convenient to arrange the heronries in order of size as returned by the 1928 census. Thus, any particular colony can be traced immediately, provided the size is known, and where that is not the case it may readily be learnt by reference to the appropriate county table. The list is complete in respect of known occupied heronries, whether any additional data are available for them or not, but extinct heronries are not included.)

REFERENCE.

(Where the reference letter is enclosed in brackets it signifies that the condition referred to applied formerly, or at the date indicated; thus: (*l*) "nests were formerly in larch trees," or (*r*) "there was formerly a rookery adjoining." Notes (*a*)–(*e*) always occur in brackets, as referring to a past year; also (*s*), unless the shifting actually took place in 1928.)

(<i>a</i>) Ancient (before 1800).	<i>k</i>	Nests in other deciduous trees.
(<i>b</i>) Immemorial (see note p. 276).	<i>kk</i>	" " sycamore.
(<i>c</i>) Founded during XIXth Century.	<i>l</i>	" " larch.
(<i>d</i>) Founded during 1900–1914 (incl.).	<i>ll</i>	" " yew.
(<i>e</i>) Founded during 1915–1928 (incl.).	<i>m</i>	" " Scots pine.
	<i>mm</i>	" " Douglas fir.
	<i>n</i>	" " spruce.
	<i>o</i>	" " other conifers.
<i>f</i> Nests in oak.	<i>p</i>	" " conifers (Sp. ?).
<i>ff</i> " " elm.	<i>q</i>	" " on ground or cliff-face.
<i>g</i> " " beech.	<i>r</i>	" " rookery adjoining
<i>gg</i> " " alder.		(within c. 500 yds.
<i>h</i> " " ash.		at outside).
<i>hh</i> " " horse-chestnut.	(<i>s</i>)	" " has shifted through
<i>j</i> " " Spanish chestnut.		tree-felling.
<i>jj</i> " " cherry.	<i>t</i>	" " second broods reared.

HERONRIES IN ORDER OF SIZE.

ENGLAND.

135	Milton Park, Peterborough, Northants., (<i>c</i>). <i>f</i> . chiefly.
±112	Arne, Dorset. (<i>c</i>). <i>m</i> .
103–109	Aldershaw, Sussex. (<i>a</i>). <i>f</i> . (<i>s</i>). twice (<i>f</i>). <i>r</i> . after 1905.
±100	Somerton Wood, Somerset. (<i>b</i>), (<i>r</i>). <i>f</i> , <i>h</i> , <i>k</i> , <i>g</i> , <i>kk</i> . (<i>s</i>).
94	Reedham, Norfolk. (<i>c</i>).

- 75 St. Osyth, Essex. (c).
 70-80 Islington, Norfolk. (b).
 73 Fawley Court, Bucks. (c). *r. f* (19+). *jj* (31+).
 65+ High Halstow, Kent. (d). *f*.
 60 Eaton Hall, Cheshire. (b). *f.* and *h.* (*h* chiefly, 1879).
 60 Wanstead Park, Essex. (a). (*ff* and *h*, 1872).
 58 Parham, Sussex. (c). *m. r.*
 53 Goodwood, Sussex. (c). 31 *p.* 22 *g.* (1924, 28 *g.* 16 *p.*)
 52 Halswell Park, Somerset. (c). *t. g* (22+). *f. n. j* ?.
 51 Chilham, Kent. (a). *g.* (*r.*) expelled. *r.*
 ± 50 Nacton, Suffolk. (c-d). *n* ? and *l.*
 46-48 Windmill Hill, Sussex. (a). *f. r.*
 42 Hamilton Wood, Lancs. *h.* and *k. r.* (*h.* and *g. c.* 1872).
 42 Willughby Wood, Lincs. (d). *f.*
 ± 40 Killerton, Devon. (b). *g.* and *f. r.*
 39 Combermere, Cheshire. (d). *r. f.*
 39 Tabley, Cheshire. (c). *hh.*
 35-36 Black Dyke, Norfolk. (c).
 35- Munden, Essex. (*e* ?). *j* ? . *f.* and *h.*
 34 Muckton Wood, Lincs. (b). *f.*
 34 Kimberley, Norfolk. (c).
 33 Blackheath, Suffolk. (b). *r. m.*
 ± 33 Blythburgh-Walberswick, Suffolk. (c). *m.*
 31-34 Banwell, Somerset. (b). *m.*
 31 Hinton Admiral, Hants. (c). *m.* and *o.*
 30 Stanford Hall, Notts. (b). *m.*
 ± 30 Richmond Park, Surrey. (c).
 29 Dallam Tower, Westmorland. (a). *r.* (*f.* till 1775, later *p.* : 1877
 g. h. and *ff. (t)*).
 28-30 East Stoke, Notts. (b).
 28+ Trenant Park, Cornwall. (b). *g.* and *p.* (*f.* 100 years ago).
 27-30 Brockley Park, Somerset. (a). *r. f.* and *h.*
 25-30 Holkham, Norfolk. (c).
 26 Swell Wood, Somerset. (d) 24 *f.* 1 *l.* 1 *m.*
 26 Bagot's Park, Staffs. (a). (*f.* 1893).
 26 Warwick Park, Warwicks. (b). 19 *j.* 5 *ff.* 1 *l.* 1 *hh.* (c. 1850 *ff.* some
 m. o. and *n.*).
 ± 24 Holker Moss, Lancs.
 23+ Westwood Park, Worcs. (d). *f.*
 ± 20-25 Cloughton, Lancs. (b).
 22 Coley Park, Berks. (c). *k.*
 22 Boreham House, Essex. (c). (*p.*) *f.* and *ff.* (*r.*)
 21 Wassand, Hornsea Mere, Yorks. (c). *gg. r. l.*
 20+ Burwood Park, Surrey, *j. f. ff.* and *hh.*
 20 Warleigh Wood, Devon. (c). *f. r.*
 20 Wharton Wood, Lincs. (d). *f.*
 ± 20 Halston, Salop. (b). *kk. r.*
 18-22 Ashenden, Kent. (e). *f. r.*
 20 Evedon Wood, Lincs. (c). *r.*
 19 Chest Wood, Essex. (c). (*f. c.* 1890). (*r. c.* 1890).
 19 Scarisbrick, Lancs. 12 *g.* and *l.* and *f.* 1 *h.* 1 *gg.* 1 *k.* (*l.* and *g.*, 1872).
 19 Otmoor, Oxon. (e). *f. t.*
 19 Flixton, Suffolk. (c).
 19 Coombe Abbey, Warwicks. (b). 17 *f.* and 2 *h.*
 ± 19 Crichel, Dorset. (c).
 18 Wytham, Berks. (c). *f.*

- 18 Eastdon House, Devon. (*d*). *g*.
- 18 Old Hagg Wood, Lincs. (*b*). *h*. and *f*.
- 17 Lord Wood, Flasby, Yorks. (*a*). *f*.
- 16 Wickham, Hants. (*b*). *f*. *s*. (*f*).
- 16 Stillingfleet Woods, Yorks. (*c*). *f*.
- 14-18 Fonthill House, Wilts. (*b*). *n*. and *l*. (*f*).
- 15-16 Virginia Water, Surrey. (*b*). (*n*. *c*. 1900). *j*. *f*. and 3 *n*.
- ±15-16(?) Pwllhead Wood, Monmouth. *f*., etc.
- 15 Buscot, Berks. (*b*). (*p*).
- 15 Berrington, Herefordshire. (*b*). *f*. *r*.
- 15 Althorp Park, Northants. (*a*). *f*.
- 15 Harewood Park, Yorks. (*b*). *h*. *m*. and *f*.
- ±15 Knighton Heath Wood, Dorset. (*d*). *m*. and *o*.
- ±15 Wootton, I.O.W. (*c*). *f*.
- ±15 Allers Wood, Somerset. (*a*). *n*. *r*. (*s* 1790 and 1831).
- 14-16 Bromeswell Heath, Suffolk. (*e*). *m*. *f*. and *l*.
- 14 Crofton Hall, Cumberland. (*b*). *kk*. *h*. *k*. and *n*.
- 14 Sharpsham, Devon. (*a*). *g*. and *f*. *r*.
- 14 Hemingford Park, Hunts. (*d*).
- 14 Colwick Wood, Notts. (*d*). *g*. *f*. *kk*. *ff*. *r*.
- 14 Icehouse Copse, Somerset. (*e*). *l*. *m*. *n*. *r*.
- 12-16 Brantham Court, Suffolk. (*e*). *m*.
- 13 Floriston, Cumberland. (*b*). *m*.
- 13 Appleby, Lincs. (*c*). (*m* 1908). (*s*. *c*. 1870-80).
- 13 Ilam, Staffs. (*d*. or *e*.) *ff*.
- 13 Bradford Wood, Wilts. (*e*). *f*.
- 12+ Merther, Cornwall. (*d*). *f*.
- 12 Edenhall, Cumberland. (*b*). *m*. and *l*. (*r*. before 1886). *s*.
- ±12 Rusland Moss, Lancs. *m*. (*l*). *r*.
- ±12 Gailey Pool, Staffs. (*d* or *e*). *m*.
- 10-14 Trebartha Hall, Cornwall. (*l*). *s*. *l*.
- 11 Stadbury Wood, Devon. (*b*).
- 11 Gainford, Durham. (*b*). *l*.
- 11 Stapleford Park, Leics. (*b*). *ff*. *f*. and *p*.
- 11 Mautby Hall, Norfolk. (*c*).
- 11 Aldwinckle, Northants. (*d*).
- 11 Savernake, Wilts. (*c*). *g*. *r*.
- 10-12 Hoveton, Norfolk. (*e*).
- 10-12 Gilling Big Wood, Yorks. (*b*). *m*. *r*.
- ±10-12 Kielder, Northumberland.
- 10 Ford House, Beds. (*e*). 7 *f*. 3 *h*. *r*.
- 10 Sandy, Beds. (*e*). *n*.
- 10 Sheviock Wood, Cornwall. (*p*). 3 *f*. 3 *g*. and 4 *l*.
- 10 Trevelver, Cornwall. (*c*). *g*. and *h*. *r*. *t*.
- 10 Fell Hill, Cumberland. (*b*). *s*.
- 10 Sundorne, Salop. (*d*).
- 10 Ragley Park, Warwicks. (*b*). 7 *f*. 3 *h*.
- ±10 Sowley Pond, Hants. (*b*). *m*. and *f*. and *o*. *t*.
- ±10 Bowood, Wilts. (*b*). *f*. and *ff*. (*r*).
- 9 Uldale, Cumberland. (*e*).
- 9 Hallwell House, Devon. (*b*). *f*.
- 9 Salston, Devon. (*a*). *n*. *l*. and *m*. *r*.
- 9 Stedcombe Wood, Devon. (*c*). *g*. and *m*. *r*.
- 9 Melton Hall, Norfolk. (*b*).
- 9 Ranworth, Norfolk. (*d*).
- 9 Garrett Hott, Northumberland. (*d*).

- 9 Acton Pool, Salop. (c).
 8-10 Norton Priory, Cheshire. (d). ff. h. p. r?.
 8-10 Aqualate Mere, Staffs. (a). (m. 1892). (q).
 8-9 Park Ghyll, Yorks. (c). f. and m.
 8-9 Scampston, Yorks. (d). ll. l. and hh.
 7-10 "Tyne Valley," Northumberland.
 8 St. Winnow, Cornwall. (c).
 8 Ulpha Park Wood, Cumberland. (c). m.
 8 Arlington Court, Devon. (b).
 8 Orcheton Woods, Devon. (b). (f). l. and p.
 8 Stadson Farm, Devon. (e). l. and o.
 8 Eridge Park, Sussex. (c). g. (g).
 8 Rossington, Yorks. (b).
 8 Nether Wood, Herefordshire.
 7-8 Llanover, Monmouth. (b). m. n. and f.
 7-8 Kirk Ghyll, Yorks. (d).
 7-8 Weston Park, Staffs. (d). r. f., etc.
 7 Somerley, Hants. (c). m. (s).
 7 Thurland Castle, Lancs. (d). r.
 7 Buckenham, Norfolk. (d).
 7 Narford, Norfolk. (d).
 7 Serlby Park, Notts. (b).
 ±7 Stanford Park, Warwicks. (e).
 6-8 Gunton, Norfolk. (c).
 6-7 Nr. Lorton, Cumberland. (e). n.
 6 Black Park, Bucks. (c). m.
 6 Archerton, Devon. (c). n.
 6 Sherborne Park, Dorset. (c). g. (q).
 6 Swarland, Northumberland. (c).
 6 Benacre, Suffolk. (e).
 ±6 Cobham, Kent. (b). h.
 5-6 Broughton Brook, Bucks. (c). f.
 ±5-6(?) Babswood, Northumberland.
 5 Great Corby, Cumberland. r. 2 f. 2 jj. 1 g.
 5 Muncaster, Cumberland. (a). g.
 5 Netherby Hall, Cumberland. (b). n. (s).
 5 Ponsonby Hall, Cumberland. (c). l.
 5 Fremington, Devon. (b). m.
 5 Lea Valley Reservoirs, Essex. (e).
 5 Hampton Court, Herefordshire. r.
 5 Clumber, Notts. (e). f.
 4-5 Marston Park, Somerset. (e). f.
 4-5 Healaugh, Yorks. (e). f.
 4 Dent Wood, Cumberland. (e).
 4 Manesty Wood, Cumberland. (e). 2 l. and 2 n.
 4 Puslinch, Devon. (b). s. and f.
 4 Ince Blundell, Lancs. g. (g. and ff).
 4 Tredegar Park, Monmouth. r.
 4 Elton Park, Northants. (d). r.
 4 Great Tosson, Northumberland.
 4 Thoresby Park, Notts. (c).
 4 Elterwater, Westmorland. (e). m.
 3-4 Hemley Hall, Suffolk.
 3-4 Compton Park, Wilts. (b).
 ±3-4 South Wembury Wood, Devon.
 3 Merthen, Cornwall.

- 3 Eskett Wood, Cumberland. (*e*).
 3 Wanwood, Cumberland.
 3 Buckersley Pits, Hants. *f.* and *t.*
 3 Elvetham, Hants. (*e*).
 3 Diddington Wood, Hunts. (*c*).
 3 Catfield, Norfolk. (*d*).
 3 Fishley, Norfolk. (*e*).
 3 Horning, Norfolk. (*c*).
 3 "Nr. Harbottle," Northumberland. (*c*).
 3 Styford, Northumberland. (*e*).
 3 Longleat, Wilts. (*b*). *h*?
 2-3 Grass Woods, Yorks. (*e*). *l.*
 2 Bangors Park, Bucks. (*e*). *f.*
 2 Ennerdale, Cumberland. (*b*).
 2 Greystoke, Cumberland. (*e*). *n.*
 2 Lamplugh Hall, Cumberland. (*e*).
 2 Bagga Tor, Devon. (*b*). *p.*
 2 Adlestrop, Gloucestershire. (*e*).
 2 Warton, Lancs.
 2 Grange Wood, Lincolnshire. (*e*).
 2 Stokesby, Norfolk. (*c*).
 2 Ashby St. Ledgers, Northants. (*e*). *f.*
 2 Edington, Somerset. (*e*).
 2? Barton, I.O.W. (*c*).
 1 Marbury Park, Cheshire. *g.*
 1 Dinham, Cornwall.
 1 St. Cadoc, Cornwall.
 1 Shirley Wood, Derby. (*c*). *n.*
 1 Annery-Monkleigh, Devon. (*b*?).
 1 Eastwell Park, Kent. (*e*).
 1 The Mote, Kent. (*e*).
 1 Aswarby Park, Lincolnshire.
 1 Ellingham, Norfolk. (*e*).
 1 Hickling, Norfolk. (*e*). *f.*
 1 Rollesby, Norfolk. (*d*).
 1 Chillingham, Northumberland. (*b*). *s.*
 1 Exford, Somerset. (*d.* or *e.*). *s.*
 1 Nr. Williton, Somerset. (*e*).
 1 Consall Wood, Staffs. (*c*). (*f.* and *m.*).
 1 Borley, Suffolk. (*e*).
 1(?) Betchworth, Surrey.
 1 Waverley, Surrey. (*b*). *m.*
 1 Holbrook Grange, Warwicks. (*e*). *gg.*
 1 Somerham Brook, Wilts. (*e*). *ff.*
 1 Bolton Abbey, Yorks. (*e*).
 Elvington, Yorks. Permission refused.
 Birdby, Westmorland, and Shrawley Wood, Worcs. No information.

WALES.

- ±22 Tan-y-gaer, Denbigh. (*b*). *h.* *hk.*, etc.
 20 Llanmiloe, Carmarthen. (*b*). *g.* and *ll.*
 18+ Llanllyr, Cardigan. (*a*). (*f*). *n.*
 17 Penrhyn Park, Caernarvon. (*b*). *hh.* *ff.*
 14-15 The Fron, Montgomery. (*c-d*).
 14 Vaynol Park, Caernarvon. (*b*). *p.*
 12-15 Venny Fach Wood, Brecon.

- ±10-12 Slebech Park, Pembroke.
 10+ Llwyn gwair, Pembroke.
 9 11 Highmead, Cardigan. (a). *m. n.* and *o. t.*
 9 Treguff, Glamorgan. (e).
 ±9? Aberglasney, Carmarthen. (b).
 8 Cwrt-y-gollen, Brecon. (b) *m.* and *n. r.*
 8 Glanwye, Brecon. (e).
 8 Neuadd Fawr, Carmarthen. (b). (g). *g.* and *n. r.*
 7+ Glanywern, Denbigh. (c). *ff. r.*
 6 Gilestone, Brecon.
 6 Penrice, Glamorgan. (c). (f. 1872). *s.*
 6 Sennybridge, Brecon.
 6 Tre-iorwerth, Anglesey. (c). *r.*
 5 Aberdunant, Caernarvon. (c). *f.*
 4-5 Hensol, Glamorgan. (b). (h. and k. 1872).
 ±4-5 Rûg, Merioneth. (b).
 4 Penybont, Radnor. (b). *p.*
 3 Cadnant Island, Anglesey. *p.*
 3 Llidiardan, Cardigan. (b).
 3 Llyn Ebyr, Montgomery. (d-e). *mm.*
 3 Nanhoron Park, Caernarvon. (e). *p.*
 3 Bryndraenog Wood, Radnor. (e?).
 2 Ashford, Brecon.
 2 Broomhall, Caernarvon. (b). *m.*
 2 Ystumlllyn, Caernarvon. (e).
 1-3 Solva, Pembroke. *q.*
 1-2 Castell Goifod, Carmarthen.
 1 Glynllifon, Caernarvon. (d). *p.*
 1 Voelas, Denbigh. (a). *m.*
 1 Wainddu Common, Radnor. (b).
 1 Ystrad, Carmarthen. (e).
 1 Porth Lisky, Pembroke. *q.*
 Peniarth, Towyn, Merioneth. No information.
 Pennal, Merioneth. " "

(END OF PART I.)

NOTES

EGG-DAUBING BY THE JACKDAW.

IN previous notes in *British Birds* on egg-daubing by the Jackdaw (*Colæus m. spermologus*) I can find no record of first and second layings of the same bird in the same season having been found bedaubed: so the following instance may be of interest. The first laying, consisting of six fresh eggs, all equally daubed, was found on April 25th, 1928, in a hole in a beech tree at Lavant, west Sussex; the eggs not being visible from the outside. The second laying, in the same hole, consisted on May 10th, 1928, of five fresh to very slightly incubated eggs. Of these, three were heavily daubed, one partially and the other only slightly.

In a tree, some six hundred yards away from the above, a set of four daubed Jackdaw's eggs (all infertile) was found on May 6th, 1928, possibly the produce of a relative.

RAYMOND CARLYON-BRITTON.

STARLINGS ROOSTING ON THE GROUND.

DURING the winter on the North Bull, an island near the mouth of the Liffey in Dublin Bay, I have observed Starlings (*Sturnus v. vulgaris*) at dusk roosting under thick, matted grass on the ground. I have often almost walked on these birds before they would rise. Each bird seems to make a tunnel for itself, as I have never seen two birds emerge from the same hole.

Large flocks of Starling feed on the island during the day, and the majority fly to the mainland towards evening, those roosting on the ground being never very numerous. On one occasion perhaps thirty birds rose with difficulty from the tangled grass at my feet, but more often I have put up only from six to twelve.

P. G. KENNEDY.

CUCKOO DEPOSITING EGG IN NEST CONTAINING YOUNG.

ON May 16th, 1928, I found the nest of a Hedge-Sparrow (*Prunella m. occidentalis*), containing three freshly-hatched young and one egg, in a spinney near Chichester, west Sussex. Ten days later, on looking to see how they were progressing, I was surprised to see, beside a nearly fully-fledged young Hedge-Sparrow, a Cuckoo's (*Cuculus c. canorus*) egg. Closer

examination showed the nest to contain one infertile Hedge-Sparrow's egg as well. The Cuckoo's egg proved to be slightly incubated. As possibly having some bearing on the Cuckoo's behaviour, perhaps I should mention that a pair of Garden-Warblers (*Sylvia borin*) had been building their nest about three or four yards away, and this contained three eggs on May 22nd and five on the 24th.

RAYMOND CARLYON-BRITTON.

MONTAGU'S HARRIER IN SHROPSHIRE.

A GREY Harrier was seen by Mr. George Potts and others near Broseley, Salop, on May 4th, 19th and 25th, 1928. It was evidently an adult male, but whether of the Hen- or Montagu's Harrier, was uncertain. Recently Mr. Potts was shown in the shop of a local taxidermist named Shelbrooke, Bridgnorth, an adult male Montagu's Harrier (*Circus pygargus*) which had been killed in the summer at Dudmaston, near Bridgnorth. As the two places—Broseley and Dudmaston—are only about eight miles apart, there is little doubt that this was the same bird. I have only three prior records of this species in Shropshire.

H. E. FORREST.

WHOOPER SWANS INLAND IN KENT.

ON February 28th, 1929, there were four adult and two immature Whooper Swans (*Cygnus cygnus*) on a small sewage farm just outside Groombridge, near Tunbridge Wells. I was able to get near enough to see the yellow patch on the bill before they rose and flew off out of sight, calling as they rose.

Next day (March 1st) they had returned and I was able to get within 200 yards of them with a good telescope.

They were only a few yards from the Kent-Sussex border—indeed, I was myself in Sussex while the birds were in Kent.

I cannot say how long they remained, but a visitor at my hotel told me he had seen nine Swans at the same spot a day or two previously.

R. M. GARNETT.

WHITE-FRONTED GOOSE IN BUCKINGHAMSHIRE.

WHEN duck-shooting near Langley, Slough, on the evening of February 16th, 1929, I shot a specimen of the White-fronted Goose (*Anser albifrons*). I had seen the bird flying about in the afternoon, but apart from noting that it was a goose could not identify it. It weighed four pounds and six ounces, and on being skinned proved to be an adult female in perfect plumage. It was very cold at the time and everything was frozen very hard and there was little or no place

for the bird to get food. There are very few records of this species for Buckinghamshire. With reference to recent occurrences, Mr. Oldham informs me that on January 19th, 1928, when standing on the border of Hertfordshire and Buckinghamshire, on the bank of the Wilstone Reservoir, Tring, he saw two White-fronted Geese dropping to the water. Further, on January 24th, 1929, when on the canal bank at Halton, Bucks., with Mr. Lloyd, he saw a large skein of forty geese fly over, making for the reservoirs at Tring. The cry of the birds, a laughing "huh huh," suggested White-fronted Geese, but in the dull weather it was impossible to be certain of their identity. It is possible my bird was a straggler from this lot. I have presented the skin to the Natural History Museum.

G. CARMICHAEL LOW.

GARGANEY IN SUSSEX IN WINTER.

WHILE on the shore at Glyne Gap, between Bexhill and West St. Leonards, on February 3rd, 1929, a friend of mine, Mr. Barlow, found the remains of a small duck that had been badly mauled by Gulls, and the wing of a second. On his return he gave me the following description: "Crown, dark brown; lower part of face, chestnut flecked with white; neck and breast, brown lined with black; abdomen, white; wings, blue-grey with long black and white feathers; bill, black." There cannot be any doubt that this was a drake Garganey (*Anas querquedula*) and the odd wing may have belonged to a duck. They had probably perished about January 14th.

E. M. CAWKELL.

WINTER MOVEMENTS OF DIVING DUCKS.

IN his note on the appearance of Long-tailed Ducks (*Clangula hyemalis*) in Hertfordshire (*antea*, page 214), Mr. Chas. Oldham makes the suggestion that the fact that four of the five records of this species during the last forty years, having been made in November, and the fifth late in October, may point to a regular movement about that period of the year.

There are only five records of this species for the county of Glamorgan, and the dates of these furnish some slight confirmation of his suggestion, for one is at the end of October, two in November, and two early in December. We also have a November record of two birds in Brecknockshire.

There is no doubt, however, that a big movement of diving-ducks does take place at this time, and is proved by records which we have made of three species: the Tufted Duck (*Nyroca fuligula*), the Common Pochard (*Nyroca f. ferina*), and the Goldeneye (*Bucephala c. clangula*).

During the last eight years—1921 to 1929—we have, with one or two exceptions, made a weekly visit to the Llanishen Reservoirs, near Cardiff, and recorded the numbers of the various species present on each occasion. Graphs have been made from these records, and, in the case of the first two species, show a sudden, steep rise some time during November.

One or two Tufted Ducks usually appear in September—a few pairs breed in the county—and in October an odd Pochard, or perhaps two, may join them. Then comes a day when these few birds are suddenly reinforced by a large flock, but the next visit sees their numbers greatly reduced.

A similar sudden rise in numbers is also very apparent in February, but the birds are by no means so numerous then.

Tufted Ducks remain up to the end of March, and sometimes as late as April, while the Pochards usually disappear toward the end of February, although odd birds occasionally remain until the middle of March.

Of recent years, the Goldeneye has become quite a regular winter visitor, in small numbers. Immature or female birds have arrived as early as October 9th and 14th, but it is more usually November before they are seen, while in December, about the middle of that month, there is a regular influx, and as many as six or seven may appear, one or two of these, more often than not, adult males. Most of them remain until March, sometimes as late as the end of that month, and in 1928 four, one of them an adult male, were present until April 22nd.

GEOFFREY C. S. INGRAM.

H. MORREY SALMON.

EIDERS IN HAMPSHIRE.

ON March 3rd, 1929, Miss C. Popham saw four Ducks off Hengistbury Head, near Christchurch. They were diving for food, probably shell-fish, and were waited on by two Herring-Gulls in immature plumage, which stooped at them and forced them to dive. Three of the ducks were dark coloured, but the fourth was very conspicuous by its striking black and white plumage, the black cap and white head and upper breast contrasting strongly with the black of the clearly defined lower breast, which was well seen when the drake rose up, flapping his wings. There seems to be no doubt that they were Eiders (*Somateria mollissima*). The same birds were again seen on March 5th by Miss E. Walsh, who was with Miss Popham on the 3rd, and the Gulls were still in attendance. In the *Birds of Hampshire* the Eider is described as "A rare winter visitor to the coast," and only about seven definite occurrences are recorded.

F. C. R. JOURDAIN.

TURTLE-DOVE BREEDING IN W. MERIONETH.

SINCE publishing my *Vert. Fauna N. Wales*, I have obtained evidence that—as I then foretold—the Turtle-Dove (*Streptopelia t. turtur*) is gradually extending its range westwards. Still, all records up to 1928 referred only to passing birds, generally single. Now, however, I am able to record an actual instance of its breeding on the west coast. Captain Nanney Wynn reports that a pair nested and reared young in 1928 at Brynchrug, near Towyn. Although the Turtle-Dove has bred around Bala for many years past, and is well established along the north coast as far west as Bangor, this is the first occasion of its nesting on the west coast of Merioneth.

H. E. FORREST.

LAPWING IN CANADA.

ON page 44, *antea*, Mr. Coward gives a record of a Lapwing (*Vanellus vanellus*) seen in Ottawa markets (Ontario, Canada) in October, 1911. With regard to this record I would point out that for a considerable number of years after the date in question it was not at all uncommon to find Lapwings for sale by certain provision dealers in Ottawa who catered to the more expensive tastes. However, inquiry produced the information that such birds were imported from England and were not Canadian, or even American taken. Unless there is some specific evidence that the bird mentioned by Mr. Coward was a Canadian-taken specimen, common caution prompts us to assume that it was one of these importations.

P. A. TAVERNER.

SIBERIAN PECTORAL SANDPIPER IN NORFOLK.

HAVING recently had occasion to examine the Pectoral Sandpipers in the Norwich Museum, I find that the specimen, formerly in Stevenson's collection, killed at Caistor on September 16th, 1865 (*Birds of Norfolk*, Vol. I., p. 368), which up till now has been regarded as of the American species (*Calidris maculata*) is an example of the Siberian Pectoral Sandpiper (*Calidris acuminata*). Mr. Witherby has also examined the specimen and confirms my identification. It is curious that the identity of this bird should have remained so long undiscovered, as its distinctly wedge-shaped tail and unstreaked, but spotted breast, are very distinctive. This makes the third specimen of this species obtained in the British Isles, all of which have been killed in Norfolk. The first, also in the Norwich Museum, the authenticity of which was at one time in doubt, was brought in the flesh to Knights,

the Norwich bird-stuffer, in September, 1848, by a man named Wilmot, who stated that he had shot it at Yarmouth, and it was later purchased by Mr. J. H. Gurney (Sen.) and recorded by him as an American Pectoral Sandpiper (*Zoologist*, 1849, p. 2392). Upon subsequently being offered by the same man, Wilmot, two freshly-killed American Red-winged Starlings, Gurney became suspicious that he had been imposed upon with regard to the Sandpiper, and expressed his doubts as to its authenticity in a further note to the *Zoologist* (1849, p. 2568). In 1892, however, Southwell discovered that this bird was an example, not of the American, but of the Siberian species (*Zoologist*, 1892, p. 406), and for this reason, together with the fact that Roberts, the Norwich taxidermist, by whom it was later restuffed, stated that it had undoubtedly been originally set up from the flesh, and had been badly wounded in the neck and leg, he decided that its authenticity as a genuine Norfolk specimen should be accepted, an opinion which appears to have been justified by the subsequent appearances of the species in the county. The third occurrence was on August 29th, 1892, when a female was shot on Breydon by Mr. T. Ground of Birmingham (Southwell, *Zoologist*, 1892, p. 356; Seebohm, *Ibis*, 1893, p. 181).

B. B. RIVIERE.

GREENSHANKS IN KENT IN WINTER.

A NUMBER of Greenshanks (*Tringa nebularia*) were to be seen on the mud-flats at Seasalter during the early part of January, 1929. I cannot say with any certainty how many there were, but several were shot, and I was told that on one occasion two were got from a flock of about a dozen. I examined one in the flesh on January 15th.

N. F. RICHARDSON.

SCANDINAVIAN LESSER BLACK-BACKED GULL IN SURREY.

STANDING on one of the frozen reservoirs at Barn Elms on February 23rd, 1929, was an adult Lesser Black-backed Gull, which could only have been *Larus f. fuscus*. It was one of a group of Gulls, chiefly Black-headed, with a few Common and Herring-Gulls. Its mantle looked jet-black and was far darker than the backs of some Coots which were near. It had hardly any streaks on its head or neck.

A. HOLTE MACPHERSON.

SNOW-BUNTING IN N. WALES.—Mr. H. E. Forrest informs us that a Snow-Bunting (*Plectrophenax nivalis*) was seen by

Mr. J. Steele Elliott on February 11th, 1928, on the Great Orme's Head, Llandudno; while on November 1st, 1928, Mr. S. W. P. Freme witnessed the arrival, at Point of Ayr, Flintshire, of about forty together; there was a strong east wind blowing. Some of these birds remained in the neighbourhood until the end of January, 1929.

PETCHORA PIPIT AT FAIR ISLE.—At the January, 1929, meeting of the British Ornithologists' Club, Dr. E. Hartert exhibited a male of *Anthus gustavi* which had been shot at Fair Isle (Shetland) on October 9th, 1928, by Mr. George Stout (*Bull. B.O.C.*, XLIX., p. 57). The bird is now in the Royal Scottish Museum and had been sent for exhibition by Surgeon Rear-Admiral J. H. Stenhouse, who also records it in *The Scottish Naturalist*, January–February, 1929, p. 9. This is the second recorded occurrence of the species in the British Isles, the first having also been taken at Fair Isle on September 24th, 1925 (*vide antea*, Vol. XX., p. 11).

TREE-CREEPERS' NESTS IN BUILDINGS.—With reference to notes on this subject (*antea*, pp. 138, 170), Mr. S. Lewis informs us that on April 26th, 1903, he found a nest with seven eggs built in a crack of the masonry of a barn wall, about five feet from the ground, near Wells, Somerset.

GREAT GREY SHRIKE IN CUMBERLAND.—Mr. R. H. Brown informs us that he saw a Great Grey Shrike (*Lanius excubitor*) near Penrith on February 3rd, 1929. Mr. Brown also notes that he saw one at the end of April, 1917, near Carlisle, which should be put on record in view of the bird's irregular appearances in the west, especially in spring.

WHITE'S THRUSH IN SUFFOLK.—At the January meeting of the British Ornithologists' Club, Dr. E. Hartert exhibited on behalf of Lord Rothschild a specimen of *Turdus d. aureus*, which had been shot at Bury St. Edmunds on December 3rd, 1928 (*Bull. B.O.C.*, XLIX., p. 58).

KESTREL IN LONDON.—Mr. Walter Cave informs us that on March 14th, 1929, he saw a Kestrel (*Falco tinnunculus*) in the Green Park, where it alighted on a tree. It then flew off and circled, hovering over Piccadilly, and rising to a good height made away to the N.W.

HEN-HARRIERS IN ANGLESEY.—Mr. H. E. Forrest informs us that Professor Kennedy Orton watched two immature Hen-Harriers (*Circus c. cyaneus*) on November 18th, 1928, quartering the ground of Malldraeth Marsh, Anglesey. He

saw one of them there again on the 28th, and on December 3rd and 5th.

RUFF IN CORNWALL IN MARCH.—Mr. C. Angove has sent us a male *Philomachus pugnax*, obtained near Porthcurno, Cornwall, on March 2nd, 1929. The Ruff is a scarce visitor to Cornwall in spring and the date is very early.

SIXTH INTERNATIONAL ORNITHOLOGICAL CONGRESS.—Professor Dr. L. F. de Beaufort, Director of the Zoological Museum, Amsterdam, who was elected Honorary Secretary of the above Congress, informs us that the date of the Congress, which is to meet in Amsterdam in 1930, has been provisionally fixed for June 1st to 8th. The President-elect is Professor Dr. Einar Lönnberg of Stockholm.

LETTERS.

THE DIVING-HABITS OF THE LONG-TAILED DUCK.

To the Editors of BRITISH BIRDS.

SIRS,—The observations conducted by Messrs. Ingram and Salmon on the dives of the Long-tailed Duck (*antea*, p. 264) reopen a very interesting question, and one which, I think, is still some way from being satisfactorily answered.

In estimating the *average* duration of a dive of a given species, the only reliable figures we can hope to give, in the present state of our knowledge, are those of birds diving in what, so far as we know, are their usual depths, and under normal conditions.

In the case of the Long-tailed Duck, 3-4 fathoms, in salt water, can be taken as fairly representative, and it was from individuals diving under these conditions that the figures given in the *Practical Handbook* were taken.

The conditions under which the ducks noted by your correspondents were diving, on the other hand, must be considered rather artificial, the environment of a reservoir being so totally different from that of the open sea. Even so, it would be interesting to know the particular factor that could have caused these long dives. Record dives of this species, quoted by Dr. J. M. Dewar in his delightful work, *The Bird as a Diver*, are 55 seconds (Saxby) and 70 seconds (Anderson), the depth in the latter case being about six fathoms. Fourteen metres (about 46 feet) (Naumann, quoted by Millais) is given as the greatest depth reached; but Millais states that this duck becomes thin if it dives much in thirty feet of water. From which we may assume that he considered even this to be an exceptional depth.

Individual dives and even series of dives are, in all species of diving ducks, subject to considerable variation. But taking the average figures of depth and period from our rather scanty data, I should place the Scoters first for deep and lengthy dives, and the Long-tailed Duck second.

As regards the remainder of the Anatidæ, future investigations will prove, I think, that few, if any, species descend *habitually* to a greater depth than three fathoms, or remain submerged for a longer period than thirty seconds.

CHARLES E. ALFORD.

FLEDGING-PERIODS OF WOOD-PIGEON AND ROBIN.

To the Editors of BRITISH BIRDS.

SIRS,—Mr. R. H. Brown's record (*antea*, p. 208) of the fledging-period of a Wood-Pigeon being twenty-nine days seems to be a striking example of variability in the fledging-period, when compared with my record (*antea*, p. 205) of thirty-seven days "combined period of incubation and fledging."

The actual dates of this record may be of interest: Began to build on April 15th, 1927. Built strenuously on the 16th and 17th. Built for a short time in morning only on the 18th. Hen on nest all day (first egg) on the 19th and continued to brood very tightly, onwards. One nestling left nest and perched on a branch near the nest on May 24th. Both nestlings perched on a branch above nest all day (remaining there for the night) on May 25th. Both young birds flew from nest-tree on May 26th.

If sixteen days is the average time for hatching, these fledglings could fly strongly twenty-one days after birth. I have been unable, so far, to record the exact incubation-period of any of this species.

Mr. J. C. S. Ellis's record (*antea*, p. 208) of Robins (*Erithacus r. melophilus*) being fledged on tenth to eleventh day is abnormally early, judging by my own observations, on the north coast of Cornwall. There is always the possibility that an empty nest is due to the young being scared out prematurely. I may mention a case last year, where the nest was empty nine days after hatching. I discovered one bird only, twenty yards from the nest. It was very weak and immature and, though it was fed, died the first night and, on the day following, the parents disappeared. In this instance I reckoned that the fledgling I found was the only one which escaped out of the nest from some enemy.

B. H. RYVES.

Feb. 7th, 1929.

FULMARS BREEDING IN DURHAM.

To the Editors of BRITISH BIRDS.

SIRS,—I watched the Durham colony mentioned by Mr. Clark (*antea*, p. 165) during the whole 1928 breeding-season, and my observations agree in that there were about eight pairs sitting, but instead of six eggs hatching and four young apparently flying, as reported by him, I saw seven young birds, all of which apparently flew, though I did not see them actually leave the nest.

Another point which is really more important, as it has bearing on the question of breeding and non-breeding birds in a growing colony, is that Mr. Clark's account would suggest to the reader that all the birds of this colony were breeding pairs (eight pairs, all of which laid). In a previous note on this colony I mentioned that most of the Fulmars appeared to be non-breeding birds, and after careful observation this year I am satisfied that at least three or four—probably more—non-breeding pairs were present, as well as the pairs that bred or attempted to breed.

C. NOBLE ROLLIN.



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REPORT ON THE " BRITISH BIRDS " CENSUS OF HERONRIES, 1928.

BY

E. M. NICHOLSON.

PART II.

RELATIONS WITH MAN.

A CONSIDERABLE amount of information was sent in regarding the relations between man and the Heron. These prove to vary most strikingly in different parts of the country, or even of single counties. Taking the breeding-season first, our data make it clear that the majority of existing colonies enjoy active protection, which in a considerable number of cases is so strictly enforced that bird photographers, or even observers, are generally forbidden to disturb their privacy. This protection is a personal concern of the landowners and tenants responsible, owing little or nothing of its effectiveness to the force of law. Moreover, it has been secure over a long period of years; nearly a century ago, when Coley Park heronry was started, we find the landowner putting a clause to safeguard it in the neighbouring tenant's lease, and no doubt this tradition goes back unbroken to the time when heronries first became valued as assets to falconry—that is, to the thirteenth century at least. But to this rule of strict preservation exceptions sometimes occur: a colony may shift on to an estate where its presence is not welcome, or a change of ownership may result in protection being withdrawn, and the destruction of the heronry ordered. Upon this subject we have been supplied with a good deal of information, which it does not seem desirable to print here in detail. To give a brief summary, we have notes of less than twenty heronries having been destroyed by the gun in more or less recent years, only four or five of them since the War. The reason for such destruction is usually fishing interests; in a very few cases disturbance to Pheasants or the nuisance caused by the effluvia of decaying fish has been responsible. In one instance trees have been felled in order to dislodge a heronry which disturbed the meditations of a religious house into whose hands the property had passed. Several other heronries where birds are often shot on the nest continue to be occupied, and the fact that some heronries are capable of resisting repeated attempts to destroy them is proved by the cases of Aqualate (Staffs) and Boreham House (Essex), both of which survive in spite of the efforts to destroy them which were recorded at the end of last century. In the second of these instances the last sitting bird was killed on the nest in 1883, yet thirty young could be destroyed during one day in 1886 and ten eggs during



another, three years later ; the colony, which afterwards became large and flourishing, is now declining again without apparent reason. For while we find heronries doomed to extirpation which persistently refuse to be extirpated, we have, on the other hand, examples of colonies enjoying the most complete protection which it was possible to give suddenly decaying or migrating elsewhere without any cause being traceable, as at Orwell Park (Suffolk) between twenty and thirty years ago. Although it is not easy to be sure that evidence is not being suppressed, we find no reason to suspect that deliberate destruction of heronries is more than a negligible factor at the present time, so far as established sites are concerned, and we are specially indebted to those landowners and agents, who consider it necessary to take measures for keeping down Herons on their estates, and who have nevertheless taken us into their confidence on this subject, so that we are better in a position to judge to what extent this factor is operative. We therefore feel justified in stating that the majority of the English, and probably of the entire British, stock of Herons enjoy effective protection where they breed.

One toll upon the species which was formerly considerable and has long virtually ceased was the sport of falconry ; even when the bag was insignificant the effect upon heronries chosen as the base of operations and the ensuing mortality among the young must have been very considerable. Another former toll, of perhaps equal importance, was the custom of eating the young, either as nestlings or soon after fledging. The household accounts at Althorp and elsewhere show what an important business this was, and what a large number of young were taken ; however, since some of the heronries thus victimised are still extant, the burden cannot have been fatal. Probably the taste for young Herons, which was strong in the sixteenth and seventeenth centuries, began to decline with the passing of Squire Western, but as lately as the 'thirties of last century Lord Carnarvon's friends at Pixton—now Allers Wood (Somerset)—ate them skinned, stuffed and roasted like hare, with strawberries and cream to follow, and up to at least 1896 the young were largely shot for eating on Romney Marsh on their arrival there in May–June (*Zoologist*, 1896 and 1908). Apart from such interference by owners or occupiers the chief danger to which heronries are exposed is the felling or blowing down of their trees. We know that through this agency a large number of heronries have perished and many surviving ones have been forced to shift quarters. Among colonies which became extinct on this account prior to 1914 we find Ravensworth (Durham) c. 1850–55 ; Combermere first colony⁽¹⁾ (Cheshire)

(1) Deliberately, in order to expel the Herons.

c. 1850-60; Michelgrove (Sussex) c. 1832; Attingham Park (Salop) c. 1912; Old Paddock Wood (Oxon.) and Dipton Wood (Northumberland) in 1909; Bayfield Hall ⁽¹⁾ (Norfolk) c. 1881-2; Knowle (Somerset) c. 1912; Walton Hall (Yorks.) after 1865; Tangham (Suffolk) before 1914 and Dinedor and Bredwardine (Hereford.), Treowen ⁽²⁾ (Monmouth), and Stafford Wood (Cumberland) about the same period. The Holmstone site on Dungeness (Kent) was razed over a century ago by preventive men in order to deprive smugglers' cargoes of a favourite shelter.

Every great war in which England has taken part has brought destruction to the fine trees in which Herons habitually nest: thus the colony in great oaks at Easton Piers or Percy (Wilts.) was felled at the Armada period; and others owing to the exigencies of the Napoleonic war. But probably no war has proved nearly so damaging to the established sites as that of 1914-18, in which were felled the colonies of Chillingham, Houxty ⁽²⁾ and Harbottle (Northumberland); Oakley Park (Salop); Braemar Wood and Wythorp (Cumberland); Sandy, first colony (Beds.); Yantlet (Kent); Wolmer ⁽²⁾ and Elvetnam, first colony (Hants.); Dovedale, odd nest (Staffs.); Ramsgill, two groups (Yorks.); Llanfechan (Brecon), and Coed (Carmarthen). These are simply cases where the colony came to an end; many others were locally dislodged as at Waverley (Surrey), Netherby and Floriston (Cumberland), Gainford (Durham), Tredegar Park (Monmouth), Somerley (Hants.), Exford (Somerset), Buscot (Berks.), Leighton (Montgomery), Hensol and Penrice (Glamorgan) during the same period, while wholesale felling outlasted the term of hostilities and has since put an end to Hinton Waldrist (Berks.), Longford and Eaton Wood (Derby), Coombe Wood (Cumberland), High Kellas and Blakehopeburnhaugh (Northumberland), Hundred-acre Wood (Suffolk) and Garth (Brecon). Others, particularly in the north and west, have been more or less completely dispersed by the same process.

The conduct of the birds in these circumstances is infinitely variable. In several instances, as at Somerton (Somerset), about fifty years ago, Dallam Tower (Westmorland) in April, 1775, and Hundred-acre Wood (Suffolk) in 1919, sitting birds have allowed the nest-trees to be felled under them and eggs and young have perished, yet in all these cases the stock still flourishes at or quite near the original locality. On the other hand the mere felling of timber in the vicinity has been responsible for several cases of desertion, while Gayhurst Wood (Bucks.) is said to have shifted and Mells (Somerset) and Mottisfont (Hants.) to have been entirely deserted simply through the cutting of undergrowth, in the last case by a party of clog-makers.

(1) Deliberately, in order to expel the Herons.

(2) Although the actual nest-trees were spared.

The extinction of Earlham (Norfolk) is put down to the opening of the grounds as a public park, and Combe Abbey (Warwicks.) is noted as gradually shifting from a popular picnicking site, yet two very flourishing heronries have existed for many years in metropolitan parks within easy reach of Charing Cross, and the larger of these, like the now extinct heronry in Hampden Park at Eastbourne, has had much to put up with in past years during rook-shooting, carried on in the breeding-season against the intermingling rookery. Penrice (Glamorgan) is said to have shifted through the disturbance of a new wing being added to the Castle, and Ragley Park (Warwick) through continued attention by bird-photographers two seasons running; on the other hand such colonies as High Halstow (Kent) have been persistently photographed over a much longer period without any check to their increase resulting. Several colonies are alongside a railway, and Brockley Park (Somerset) comes within 100 yards of a very busy main road. Graves in 1811 mentions a heronry in trees overhanging the Great North Road, with many coaches passing beneath it daily. Modern developments seem not to have put an end to many heronries, but Hooton (Cheshire) was destroyed about 1891 by the construction of the Manchester Ship Canal, and Eglinton Castle (Ayrshire) was dislodged after a brief existence between 1830 and 1850 by the establishment of iron works near by (*Naturalist*, 1851). On the other hand, the immemorial heronry at Rossington (Yorks.) has not been disturbed by the sinking of a pit and establishment of a colliery village within fifty yards of it. The desertion of Bodryddan (Flint.), once a very flourishing site, is said to be due to the drainage of a neighbouring marsh which was the favourite feeding-place.

It is not uncommon, especially in Scotland and the north and west, for trees containing nests to be blown down, and the complete desertion of Hampden Park (Sussex) in 1918, Burton (Cheshire) about 1880-82; Bolam (Northumberland) about 1913 and Bwlch-ychan (Cardigan) in 1925 are attributed to this cause, beside various local removals and temporary desertions. At Chilham (Kent) nests are described as being very hard to reach owing to the rottenness of the branches, while at Stapleford Park (Leics.) the supporting stems are so rotten "that they break off with the weight of the nests and destroy them." At Shevioc (Cornwall), Sandy (Beds.) and Somerley—one group, 1927—and Vinney Ridge (Hants.) fires are given as having dislodged or assisted in dislodging a colony; at Arne (Dorset) many of the nest-trees were burnt about 1918 but the colony stayed on.

The collecting of the eggs of the Common Heron is not, generally speaking, a serious menace to the species. Consall Wood (Staffs.) is stated to have been reduced to its present plight through nest-

raiding by boys from Leek and colliers and others from the Potteries. At Elton (Northants.) it is suggested that decrease may be due to people with climbing irons who have sometimes broken into the park and raided the heronry ; a similar case, when the raiders were a party of schoolboys under a master, seems to have made a profound impression in Northumberland, where it is given in a variety of versions as a reason for withholding information about breeding-sites. Banwell Wood (Somerset) is said to have suffered from "prolonged visits by egg-collectors." In Wiltshire eggs are reported to have been taken at Shearwater (extinct) and at the odd nest at Somerham on April 7th, 1928 ; other odd nests were robbed at Bourton-on-the-Water (Glos.) in 1927, at Holbrook Grange (Warwicks.) in 1928 ; at Bolton Abbey (Yorks.) in 1926-27, and some years ago at Primley (Devon). A nest at Vinney Ridge (Hants.), one of the last of that colony, was robbed, being near the road ; the same is believed to have occurred at Lorton Hall, Cumberland ; while in Yorkshire the nucleus of a heronry was robbed by schoolboys at Houghton Woods c. 1887 and again at Enholme "about twenty years ago." The extinction of Warton (Lancs.) was due to persistent robbery of the nests after a keeper ceased to be maintained there. Keepers, although in some places very hostile to the Heron, have proved elsewhere valuable defenders, and certain colonies, like the recent one on Hornsea Mere (now the largest in Yorkshire), owe their existence entirely to the exertions of a keeper.

Apart from the breeding-season, shooting, and perhaps to a less extent trapping, are the chief means by which civilisation impinges on the Heron, since into the indirect consequences of drainage, river pollution, afforestation and development, it is beyond our present scope to inquire. It is neither feasible, nor perhaps desirable, to print in full the information upon this aspect which the census has elicited. The country may be divided into areas where Herons are protected, more or less strictly (we refer to practice, not to legal theory), such as the metropolitan district and many estates in most parts of the British Isles, areas where they are let alone or ignored, areas where they are kept down "within reasonable bounds (?) " and areas where a serious attempt is made at local extermination. The greater part of East Anglia and the neighbouring counties appear to fall in one of the first two groups. In Hertfordshire and Middlesex the absence of a breeding-site is directly traceable to the gun, but we have no evidence that persecution still continues. In Northamptonshire few seem to be shot, at any rate on the Nene. But in the Leicester-Lincoln-Sheffield region the slaughter is very serious : a reward of 10s. per head is offered and " 11 or 12 Herons have been seen at one time

hanging on a vermin pole." In Derbyshire, although the Heron is still a common bird, the breeding colonies have been practically extirpated since 1900, concurrently with the extensive stocking of streams and lakes. In Gloucestershire, another fishing county, every attempt to found a heronry has been ruthlessly dealt with, the latest actually in 1928; a great many are shot and a reward of 5s. is paid for them. In Wiltshire the reward has been discontinued at Longleat since 1852, but in other parts of the county persecution is as severe as anywhere, and we are reliably informed that fifty were shot at one locality in this county during the winter of 1927-28. (It will be observed that this almost equals the total number of breeding pairs.) In Devon the position is very involved. They are not much shot on estuarine waters, and many of the landowners protect them, but the Dart, Tamar and Plym, and apparently also the Exe Conservators, offer a shilling a head, and they are also shot freely in parts of the north and the extreme south-east, where rewards would formerly, and probably still, range from 3s. 6d. to 7s. 6d. or even 10s. With this exception they seem not to be much molested east of Exeter. In Cornwall there is a reward of 7s. 6d. in the Padstow area, but few appear to be shot. In Hampshire they are killed to a certain extent in most parts, and evidently on a large scale up the Test and on other fishing waters. In Somerset very few, if any, are shot, apart from about twenty a year in the Exmoor region. In Kent and Sussex they suffer comparatively little except from casual gunners, who account for a good many in winter. In Herefordshire slaughter by fishing interests is very extensive. In Yorkshire they are shot regularly in the E. Riding on Driffield trout streams and some young on the Humber where "vicarious gunners" are said to have become a nuisance since the war. In Wensleydale a large number are shot and "on one day nine were seen on the banks of the river shot by local keepers." In Cheshire they are not shot on the large estates in the centre of the county; in Staffordshire at Bagots Park some were shot on the nest by marauders one Sunday night in 1923; and elsewhere in the north, especially on the east coast, gunners whose definition of game includes the Heron are reported as a serious factor. In Northumberland, where the evil seems most serious, they are also shot to a certain extent by keepers, and they have suffered from the break-up of their colonies by felling more seriously here than elsewhere. In Cumberland, which has also been unfortunate in that respect, they are immune in several areas at least. In Westmorland fifteen to twenty were killed during 1927 at a single trout hatchery. Turning to North Wales, the position is described as being very serious indeed in Anglesey, where the seaside gunner who "likes to have one Heron in his bag" has become frequent

since the war, and in Caernarvonshire. In the Conway valley there is a reward of 5s. a head. On Menai Straits, however, the sea fishermen are not unfriendly, and although a number are shot in the Vale of Clwyd (Denbigh) the situation there does not give rise to alarm. For Merioneth and Montgomery we have no sufficient data; further south in Wales no excessive persecution is indicated by the reports.

To sum up, the counties in which Herons are shown to be killed on a large scale are Derby, Devon (parts), Gloucester, Hampshire, Hereford, Leicester, Lincoln (part), Northumberland (?), Nottingham, Westmorland, Wiltshire, Yorkshire (parts), Anglesey and Caernarvonshire. In some of these areas the campaign is so well organised and financed that the Heron as a breeding species is unable, or practically unable, to survive, and these areas appear to act as a drain on the Heron population as a whole—a point which will be dealt with under Movements. Nevertheless, there is no evidence that the survival of the species is more than locally endangered, nor does any English scheme appear to compete in thoroughness with that adopted in a county north of the Border (which it would be superfluous to name) where on every Thursday regularly the keepers turn out over the whole length of a certain river and shoot all Herons, Cormorants, Dippers, and birds considered destructive to fish.

Since it was considered desirable to obtain some comparison between the degree of protection afforded by law and that actually prevailing, we caused a question to be put to the Home Secretary in the House of Commons regarding “the names of the county and borough authorities which are using their powers under the Wild Birds Protection Acts to give protection to Herons, either for the close season, for an extended close season, or for all the year.” To this Sir William Joynson-Hicks gave the following reply:—

“I believe the following list to be correct, but there has not been time, since the Question appeared on the paper, to verify it completely.

COUNTIES AND COUNTY BOROUGHs (ENGLAND AND WALES)
WHERE THE COMMON HERON IS PROTECTED.

BIRDS ADDED TO SCHEDULE.

<i>Counties.</i>	<i>County Boroughs.</i>
Chester	Barnsley
Isle of Wight	Barrow-in-Furness
Hertford	Blackburn
Huntingdon	Burton-on-Trent
Kent	Chester
Lancaster	Eastbourne
Northampton	Halifax
Ditto	Ipswich
Soke of Peterborough	

Counties.

Rutland
Stafford
Suffolk, East and West
Sussex, East and West
Westmorland
Wiltshire
Worcester
Yorks., East, West and North Ridings
Cardigan

County Boroughs.

Leeds
Northampton
Portsmouth
Rochdale
Southport
Stockport
Wakefield
Wallasey
Warrington

SPECIAL OR EXTENSION OF CLOSE TIME.

Counties.

Northampton, Soke of Peterborough

County Boroughs.

Northampton

PROTECTED ALL YEAR.

Counties.

Chester
Derby
Isle of Wight
Huntingdon
Middlesex
Monmouth
Sussex, East and West
Westmorland
Yorks., W. Riding
Cardigan
Denbigh

County Boroughs.

Barnsley
Chester
Eastbourne
Halifax
Leeds
Newport (Mon.).
Portsmouth.
Sheffield
Stockport
Wakefield
Wallasey.

SUNDAY PROTECTION.

Leicestershire."

A comparison of this reply with the data already reviewed will show on the one hand that several of the areas where most birds are killed enjoy the fullest nominal protection, while others, like Somerset, where protection is very satisfactory and the species increasing, allow the Heron no privileged legal status. Nevertheless, the largest heronry in the country is in a neighbourhood where protection is afforded by law to a conspicuous extent, and in Chester, Huntingdon, Sussex and Cardigan, among those extending protection through the whole year, the discrepancy between theory and practice is not known to be very marked.

RELATIONS WITH OTHER SPECIES.

The relations between one species and another are roughly divisible into four categories—predatory, parasitic, social and competitive. Under these heads the data collected by the census may conveniently be dealt with, although it is obvious that certain cases might reasonably be assigned to more than one class.

(a) PREDATORY RELATIONS.

The Common Heron, except in the earliest stages of its life, is too large and formidable to be the normal prey of any member of

the British fauna. In Scotland, cases are described of attacks upon it by the Golden Eagle (*Aquila c. chrysaetus*), but these appear to be exceptional, and in none is the quarry known to have perished. The Peregrine Falcon (*Falco p. peregrinus*) is also noted in isolated instances as an enemy of the Heron, and it was formerly exploited in this capacity by falconers, who have long been a negligible factor so far as this question is concerned. In one case (Birch, Essex, February, 1878) the continued presence of a pair of Peregrines was held responsible for the migration of an entire colony to another site.

The Carrion-Crow (*Corvus c. corone*) is apparently the worst destroyer of Heron's eggs, with the possible exception of man. Thus at Eastdon House (Devon) the check on increase of the colony is attributed by the owner to Crows sucking the eggs; at Thoresby (Notts.) during some years of the mid-nineteenth century no young were reared through Carrion-Crows; at Otmoor (Oxon) in May, 1928, two clutches were sucked by the neighbour Crows; at Burton Constable (Yorks.) a solitary nest met the same fate in 1925; at Fivehead (Somerset) Crows were largely, if not wholly, responsible for temporary desertion of the site in 1924; at Goodwood (Sussex) the heronry is considerably pestered by Crows nesting in the same wood; at Colwick (Notts.) two outlying nests deserted through the adjoining trees being blown down were immediately colonised by Crows; at Talgarth (Merioneth) they are noted as having sucked Herons' eggs, and at Glanwye (Brecon.) and Rusland (Lancs.) they are the chief of the enemies recorded. Crows are in all probability to blame for other losses, the cause of which has not been fixed. Only at Brantham Court (Suffolk) is the Jay (*Garrulus g. rufitergum*) noted as an agent of destruction; here it is "known to destroy at least twenty eggs annually," which is an average of more than one for every Heron's nest. The Magpie (*Pica p. pica*) is indicated only at Rusland (Lancs.) and the Jackdaw (*Coloeus m. spermologus*) not at all, although it has previously been held responsible for similar raids. Llidiardan (Cardigan) is said to have shifted in 1926 through a pair of Buzzards (*Buteo b. buteo*) settling close; much fighting occurred in which Herons were apparently the aggressors; while at Glanwye (Brecon) Buzzards are believed to prey on the young in the nests. At Dallam Tower (Westmorland) it was observed in 1887 that the Lesser Black-backed Gull (*Larus f. affinis*) would chase Herons and make them drop fishes in time of scarcity. At Scampston (Yorks.) remains were found of a Heron apparently killed by a fox, and another with the whole tail and rump torn away, which Mr. W. H. St. Quintin considers to have been seized by an otter, succumbing to its injuries later. The Raven (*Corvus c. corax*), although sharing

sites with the Heron in Devon and elsewhere, is only noted as an active enemy in Scotland and Wales ; in Scotland and Ireland the Hooded Crow (*Corvus c. cornix*) has also to be reckoned with. The Rook (*Corvus f. frugilegus*), although noted as doing the same at Glanywern (Denbigh), is only exceptionally an enemy of this sort and belongs to a later category.

However, as no specific question was put regarding the enemies of the Heron, it is likely that a considerable amount of information which might have been elicited on the subject was deemed irrelevant by those who filled in the schedules, and much the same applies to the parasitic and competitive relations later to be dealt with.

The same size and equipment which leaves the Heron with few enemies provides it with a wide variety of prey. In some areas, in fact, it seems to be one of the most feared of all birds ; it is accused of terrifying Grouse (*Lagopus s. scoticus*) by flying low over the moors, and in Dumfriesshire and Kirkcudbright at least two heronries have been suppressed on this account, while in South Uist, where the Herons only settled in 1922, they are said to be "a nuisance, driving off the loch . . . geese, duck, etc.," and in support of this it is stated that four pairs of geese and several duck used to nest upon a certain island till the Herons established themselves, and now there is not a single goose or duck on that part of the loch—"the Herons have driven them away." (Murdo Macdonald, per Hon. C. Mulholland). It is to be noted that cases of such intimidation are not reported from any part of England or Wales. In Sussex, however (according to Mr. H. W. Finlinson), the farm bailiff at Lancing College saw a Heron killing ducks and tearing open their crops to get at food they had eaten, at five o'clock one morning a few years ago.

In proceeding to enumerate briefly the species on which the Heron is reported by various observers to prey, more prominence must be given to isolated and often exceptional cases where proof is given than to the many general entries of "trout," "eels," or even "fish," amongst which it is clearly impossible for us to distinguish those based on sure grounds and careful investigation from those which merely represent the rough general opinion of the district. It is, of course, not without value to learn that most observers in a certain region consider the Heron to feed chiefly on trout or eels or otherwise, as the case may be ; such an opinion must be taken into account, not merely by protective legislation, but by any economic inquiry which aims at conclusive results. Nevertheless, it is impossible in a scientific paper to base anything upon general statements unsupported by detailed evidence.

Out of 31 pellets from Brockley Park (Somerset), carefully analysed

by Mr. L. A. Hawkins, 23 contained some remains of water-voles, in most cases consisting of fur, although 13 showed claws in addition, and 3 held teeth. Of insects, 14 contained *Colymbetes fuscus*, in varying numbers, 6 being the most found in any single pellet. Nine or perhaps 12 contained *Dytiscidæ*, and 9 *Notonecta*. "Vegetation" occurred also in 9 instances. The extreme weights of pellets analysed were 22 and 267 grains. Other identified remains were *Cercyon*, *Geotrupes* (?) and other *Colcoptera* remains, an elytron of *Hydrophilus piceus*, a caddis case, dragonfly, *Pyramidula rotundata* (mollusc) and part of a fish about six inches long. Fur, teeth and bones of a long-tailed field-mouse (*Mus sylvaticus*) were found in a pellet which unfortunately could not be attributed to the Heron without some element of doubt.

Of 13 lots of castings collected by Mr. C. F. Archibald at Rusland (Lancs.) 13 contained fur, 8 the bones or teeth of water-rats, 1 rabbit (?), 1 shrew, 1 bird, 10 insects and 5 water-beetles. The insects included *Dytiscus marginalis* and other spp., *Dytiscid* larvæ, *Geotrupes* spp.; Carabids; a wireworm; *Melolontha* sp.; *Aphodias* sp.; Curculionid; caddis cases; a large dragonfly; water-boatmen (*Corixa*?) and earwigs. Some of the smaller insects (e.g., Curculionid beetle, *Aphodias*, and earwig) may have crept into the castings when on the ground, or have been contained in one of the larger animals eaten. There have been found under the nests at various times a sea-trout (about $\frac{1}{2}$ -lb.), 5 trout and parr, the largest 6 in., all under one nest together; flounders 4-5 inches long, eels, and a toad, while an injured bird disgorged a stickleback.

In Devon, where most of the colonies are estuarine, molluscs, polychæta, flat-fish, eels and samlets are considered the staple diet, but in fresh water they take "trout, samlets and an occasional eel," while on Dartmoor "frogs and frog-spawn are extensively used for feeding in the spring." At Moreton, near Bideford, "they come after the goldfish in the ponds." In Wiltshire perch and eels are noted at Somerham and Bowood; eel at Longleat; largely water-rat and fish at Savernake, where small prussian carp and frog-spawn are said to have been taken; while at Bradford "from the many casts I have examined they feed largely on rodents—I have found remains of beetles also (J. Penrose)." In Somerset eels, water-voles and frogs are generally noted; at Halswell a dozen pellets yielded almost exclusively water-vole with a few elytra, etc., of water-beetles. Only at Brockley and Allers Wood are trout included, and at both in large quantities. Rats are added at Fivehead and (apparently) fresh-water mussels (*Anodonta cygnea*) at Marston Park; toads are noted at Shapwick, where one bird was observed to eat a grass-snake. Accounts from Hampshire

are rather meagre and conflicting ; at Wickham they are said almost to desert fresh water in the breeding-season, though the site is some way inland, and at Sowley also they forage mostly from the shore, skeletons of flounders having been found beneath the nests ; on the R. Meon a very careful observer describes the damage to trout as "unbelievable unless seen." Fish, eels and frogs are the diet generally given ; the absence of mention of mammals of any sort may or may not be significant. However, in late May or early June, 1928, Mr. G. W. Godman saw a Heron on the Avon find "some young Redshanks that could just fly a few yards ; he swallowed one after some difficulty, then as another flew up he gave a hop, landed beside it, and proceeded to swallow that."

In Sussex eels and fresh-water fish appear the most favoured ; a water-rat is noted at Aldershaw. In Surrey at Burwood frog-spawn was picked up under a nest on April 4th, 1928 ; at Betchworth three small roach were seen cast up in haste ; in Bucks pike and perch are noted in the extreme N.E., while at Black Park, Langley, the food is said to consist largely of young wild duck and trout. At Otmoor (Oxon.) a nestling cast up a 10-12 inch pike, partly digested, and another a large eel, while "some pellets that I examined were almost exclusively water-vole remains, and undoubtedly these and to a large extent other voles and mice enter very largely into the diet here." In Beds., at Sandy, they change feeding-grounds as the season progresses, and the diet is chiefly coarse fish—pike, perch, roach, etc., occasionally small rodents. Two dead mice and a water rat were found uneaten here ; also half-digested remains of a 12-inch jack and 6-inch perch. At Ford House they feed mostly in ditches and marshes barren of fish, and frogs are considered the staple diet, yet eels and roach and often $\frac{1}{2}$ -lb. pike are found under nests. In Essex, at Boreham House, besides fish and eels constantly, "I have found several bones in the nest belonging to mice and voles. Once I found three moles which had been killed quite recently, lying at the bottom of one of the trees, but no attempt had been made to eat them." In Suffolk we find notes of flat fish, fresh-water fish and eels, while at Brantham Court "it is quite usual to see over twenty birds apparently feeding in arable land on winter wheat, oats, etc., during the winter, between heronry and foreshore." The only other instance of such behaviour is at Eskdalemuir.

At Elton (Northants) "barn rats have been found under their nests." In Notts roach and trout are noted from Clumber, and fish (especially eels), frog and fish-spawn, voles, mice, frogs, toads, tadpoles, moles and an occasional rabbit, with probably Moorhen or Coot chick exceptionally, from Colwick. In Staffs.

we get notes at Weston of "largely frogs, but also fish"; and at Ilam of trout, grayling, eel, crayfish, frogs, tadpoles, water-spiders, etc. In Cheshire "frogs, coarse fish and newts" are noted at Combermere, while at Eaton Hall a young bird had a 21-inch eel, partly digested, sticking out of its beak. At Scarisbrick (Lancs.) stomach-contents of an April bird comprised roach and stickleback; roach are also noted at Ince Blundell, and frogs at Scarisbrick. At Wassand (Yorks.) perch and roach are noted as disgorged by the young; otherwise eels, all kinds of small fish, Moorhens, water-voles and mice. They are said to be very partial to small crabs, and in spring large numbers of frogs and toads are eaten. Other Yorkshire returns are similar but less comprehensive; at Scampston, where coarse fish and trout are the rule, many short-tailed voles were found under the nests during a vole plague. At Dallam Tower, Westmorland (c. 1877), a water-vole and remains of *Dytiscus marginalis* were found in a young bird's stomach; water-voles were a favourite food. In Cumberland, at Lorton, the young disgorge almost exclusively trout, but at Floriston "water-rats, eels and chub are principal food. . . trout and flat fish also taken as well as rabbits, field-mice and frogs" (R. H. Brown). In Northumberland trout and frogs are mentioned. The case of a bird shot on the River Lynher (Cornwall) in September, 1928, which is said to have been attacking a hen and chicken at the time, is not communicated at first-hand. At Halston (Salop) "by the pellets very large numbers of rats, water-voles, mice, moles, etc., are devoured, besides frogs, fish, etc." In Anglesey and Caernarvonshire the food comes mainly from the sea. At Glanwye (Brecon) they play havoc with the trout at spawning time. At Highmead (Cardigan) food is given as "small trout, eels, frogs, and even mice."; a $\frac{3}{4}$ -lb. eel was found dropped. "Staple food . . . frogs, eels and every fish they can get hold of from goldfish to salmon smolts; I do not think, however, that they do any great harm to river fisheries, as they can only fish in the shallows, but they will clear fish out of shallow ponds in no time, as I have found to my cost. One Cormorant will kill more trout in a day than a Heron could do in a month." In Carmarthen, where they are largely saltwater feeders, we are given a diet of "fish, eels, young water hens, young wild ducks, rats, mice, young pheasants" at Pendine. In Monmouth, frogs and small fry are returned for Llanover, and eels, freshwater mussels, etc., for Pwllhead.

The 1928 Scottish returns contain only eighteen replies to the relevant question. Nine give trout (only one gives trout alone) and among these is a note from Moray, where the staple diet is eels, that "they kill and leave a lot of big trout." Eight either give eels as the staple diet or state that the observer has actually seen them

eaten. In Kirkcudbright in 1927 "one Heron killed a large number of Lady Hope-Dunbar's goldfish from an ornamental pond and laid them out on the ground but did not eat them." (A precisely similar occurrence in Devon is reputed to have been the cause for the entire destruction of a heronry.) At another Kirkcudbright colony they "feed chiefly on small herrings and black-backed flounders. I have often examined their vomits when captured in salmon-stake nets" (Adam Birrell). When the Scottish census is completed it may be possible to judge whether there is any significance in such facts as that the frog appears as a staple food only in three Lowland localities; at present the data north of the Border are very meagre.

In Ireland, fish, eels and sand eels are mentioned for Co. Down, while in Mayo eels and frogs are believed to be the staple diet, young trout and fry being also taken and probably rats and mice.

(b) PARASITIC RELATIONS.

No data on this point were asked for and few received by the census; we insert it here not merely for completeness, but for the sake of drawing attention to the considerable field open for research on the parasites of the Heron. Apart from body parasites and those attached to the nest, we should expect to find creatures subsisting on the rotten eels, etc., which are common under many heronries, and we do in fact learn from an old record (*Zoologist*, 1849) that at Coley Park otters used to come regularly to the wood, presumably for the sake of the fish and eels lying about under the trees. An interesting case of parasitism on the Heron is recorded from N. Wales, where a bird which had caught a trout and waded ashore to despatch it was set upon by one of a pair of Carrion-Crows which had been observing his movements. On the Heron dropping his trout and turning to defend himself, the second Crow seized and carried off the fish, followed by its mate. The Heron made no attempt at pursuit and went on fishing again (M. V. Wenner).

It may also be pointed out here that the size, habits and movements of the Heron make it a particularly likely agent for the distribution of plants, and that the feet, etc., of dead birds should always be examined with that in mind.

(c) SOCIAL RELATIONS.

In many parts of its range the Heron breeds in mixed colonies with one or more related forms—for example, the Night-Heron (*Nycticorax n. nycticorax*). Sir Thomas Browne records mixed colonies of Herons and Spoonbills (*Platalea leucorodia*) which existed in his time in Norfolk; there were others earlier at East Dean (Sussex) and Fulham (Middlesex) (*Zoologist*, 1877, etc.), but

nothing of this kind now survives in the British Isles, and although other species frequently share the same site they are to be regarded as competitors or parasites rather than as welcome associates. The failure of the Heron to enter into social relations at other seasons is well known.

(d) COMPETITIVE RELATIONS.

Economically, it is not apparent that the Heron has any very serious competitors for food in the British Isles, and economic ornithology is certainly too backward for the question to be profitably tackled for some time. So far as its breeding-sites are concerned, much the most important competitor is undoubtedly the Rook. It will be seen by reference to the Index of Information that no less than thirty-five of the existing heronries in England and Wales, apart from many former ones, are recorded as being mingled with or closely adjoining a rookery. Although this was one of the questions which drew a considerable response, the material sent in tends rather to intensify than to remove the difficulty of generalising upon the relations of the two birds. In the majority of cases where a rookery and a heronry coincide they appear either to ignore one another, which is usually interpreted as friendliness, or to adopt an attitude involving constant petty friction, which has been well described by one observer as "an armed neutrality." One of these alternatives applies, without further elaboration, so far as our information goes, to all the extant joint colonies except those which follow, and we have considered it unnecessary to go into detail regarding them, because whether the description is to be "friendly" or "hostile" depends principally on what the observer happens to have witnessed. If there are two observers, their impressions are, as often as not, contradictory.

Mobbing of Herons by Rooks is not infrequent; at Harleyford (Bucks.—extinct) it is said that they were mobbed every afternoon and evening; while Gayhurst (Bucks.—extinct) ceased within three years of the Rooks gaining a footing, through their harrying the returning birds and making them drop their fish. The same policy is pursued at Mourne Park (Co. Down) where "Rooks take no notice of the Herons except when the latter are bringing food to the nests, when the Rooks attack and cause the Heron to drop anything it may be carrying. At all other times they are on friendly terms" (Lord Kilmorey). In Co. Mayo, where the Rooks were formerly kept down in the interests of the Herons (as formerly at Birch (Essex) and elsewhere in England), they are now proving a serious nuisance; at Wilford Wood they are driving out the Herons which share their trees, and at Newport they have already done so, the remnant of the colony having had to resettle elsewhere.

At Llanbyther (Cardigan) Rooks mob passing Herons ; at Stedcombe (Devon) a Heron was seen mobbed while visiting the nest ; at Pantygoytry (Monmouth) Herons were never allowed to hatch off, 1920-27, and abandoned the struggle ; Edenhall (Cumberland) is said to have been split in two by Rooks before 1886, and at Red Carr, Scampston (Yorks.), they expelled the Herons c. 1913 in spite of human intervention. Blackheath (Suffolk) was also ousted by Rooks from its original site, but resettled quite close ; in 1893-94 only one or two clutches of eggs escaped destruction by Rooks (F. C. R. Jourdain). At Thurland Castle (Lancs.) the Rooks would attack a single Heron, but not more than one ; apparently there were no reprisals, though most of the Herons had a tail- or wing-feather missing. At Coley Park (Berks.) there is friction when the young start flying, and an attempted offshoot of the colony was nipped in the bud by Rooks c. 1923-4. But equally often the battle goes the other way. In Beds. the Ford House colony was founded in 1923 by a pair taking possession of three Rooks' nests and using them as a foundation for its own ; the Rooks were driven out of the surrounding group of trees. At Chilham (Kent) the rookery was for a time expelled and Rooks are still attacked if they approach too near ; at Ashenden, after repelling an offshoot of the rookery in the first year, the Herons proceeded to invade the main rookery as well, and now both sites are shared. At Ilam (Staffs.) the very large rookery shifted several hundreds of yards on the heronry being established. At Stillingfleet (Yorks.) " Herons fight the Rooks away."

One of the largest joint colonies of the two in England is Combermere (Cheshire) where the rookery has over 400 nests, some sharing the same trees ; this also occurs at Brockley Park (Somerset), Colwick, (Notts.), where the interval is in one case only half a yard, and elsewhere. At Boreham House (Essex), where the Rooks have now moved, they used to steal nesting material, and the same is noted at Glanywern (Denbigh) where they are also said to suck eggs ; the relations here are, not unnaturally, hostile, and dead Rooks are found beneath the trees. The classic instance of warfare in a joint colony is Dallam Tower (Westmorland). The nest-trees of the Herons having been cut down in 1775 the Herons could find no satisfactory alternative except in the rookery, where they attempted to establish themselves the next year ; a determined resistance followed in which many Rooks and some Herons were killed, the Herons not only gaining a footing, but maintaining themselves against a counter-attack the next year. In 1866 an attempt to establish an offshoot of the heronry was suppressed by Rooks, and there is said to have been a further great battle before the War.

While there are instances of Rooks expelling Herons and Herons expelling Rooks, and others of the two living together, there are also some curious examples where both Rooks and Herons have suddenly deserted a joint colony for no apparent reason. This happened about ten years ago at Talgarth (Merioneth), and also at Margam (Glamorgan). Joint roosts are noted at Bagga Tor (Devon) and Aston (Cheshire), where the felling of nest-trees led to invasion and a battle. One further factor involving the joint colony is the disturbance usually caused to the Herons during Rook-shooting; a pair building in a Yorkshire rookery are said to have deserted on this account. For Scotland very few data regarding the relations of Rooks and Herons are so far available, and these only for the Lowlands.

In Scotland, however, the Heron comes into contact with many other species. At Eddrachillis Bay (Sutherland) a pair were found breeding in 1923 in the midst of a coastal colony of Cormorants (*Phalacrocorax c. carbo*); at Lyre Geo (Orkney) their immediate neighbours are Herring-Gulls (*Larus a. argentatus*), Shags (*Phalacrocorax a. aristotelis*) and Fulmar Petrels (*Fulmarus g. glacialis*); on N. Uist they suffer from the neighbourhood of Ravens, and the shifting of a considerable heronry elsewhere is attributed to the establishment of a Golden Eagle's cyry in the same glen. As regards Ireland it is only necessary to call attention to the fact that whereas Ussher and Warren state that there is a joint colony* of Herons and Cormorants on Tawnyard Lough. Co. Mayo, the 1928 return explicitly states that the Cormorants nest separately on a larger wooded islet in the same lake. In Wales, Mathew records that the heronry at Poyntz Castle (Pembroke) was expelled by Cormorants. There are no such joint colonies returned for England.

POPULATION.

FERTILITY.

By far the most important data on this point were those secured by M. E. A. Davies and H. F. Witherby at Fawley Court (Bucks.). Out of the 73 occupied nests in this colony 64 were examined, containing 228 eggs and young, an average of 3.56 each. Two nests had 5 young and one had 5 eggs. Three nests had 2 young as an apparently complete clutch. At Sandy (Beds.) there are six broods of 4 young noted and one of 5. At Boreham House (Essex), on April 22nd, there were three clutches and broods of 5 and five of 4 eggs or young. In 1927 one c/6 was noted and several

*The colony was mixed in 1899 (F. C. R. Jourdain).

c/5. Very few have 3 or less, except very late nests and second broods. This is particularly interesting, since it shows that there is no decline of fertility to account for the inexplicable decay of this heronry. It is worth drawing attention to the case recorded by Smith for Wiltshire in 1887, when he was told by C. Penruddocke that at Compton Park there were usually 5-6 young per nest, and he once actually had 75 young hatched, though the heronry never exceeded 15 pairs in his time. An average of above 5 young per nest seems difficult to credit. At Banwell (Somerset) c 5 is uncommon, and there are oftener 3 than 4; at Shapwick 3 is "very usual," while at Brockley over four broods of 3, and five of 2, were reared. At Elterwater (Westmorland) 21 young are said to have been reared in four nests. On Otmoor (Oxon.) a c/6 found in late May was definitely a second brood, a family having already been brought off in that nest. At Trevelver (Cornwall) 4 was the largest clutch by March 21st, but c/5 was noted for an isolated nest. At Aldershaw (Sussex) on April 6th there were three to four c/5, nine c/4, twelve c/3 and three c/2. At Eridge there are generally 2-3 young; at High Halstow (Kent) 3-4. At Eaton Hall (Cheshire) nests examined gave one c/5, one c/4, six c/3 and two c/2; at Combermere in 1927 thirty-three broods averaged 2 each. At Ince Blundell (Lancs.) four nests reared only 7 young. At Wassand (Yorks.) young average 3-4, there being almost invariably 4 in the clutch (one c/5 noted in thirty-five years). At Great Corby (Cumberland) there was only one c/5 out of all clutches examined 1923-28, all others being 4. At Floriston, 53 nests examined 1925-28 give 2.8 young as the average brood reared. At Gainford (Durham) broods of fully-grown young give two of 5, two of 4 and one of 2. In Denbigh two c/5 were noted at Tan-y-gaer in March, with c/4 and c/3; at Glanywern 1923-26 mostly c/3 and c/4, only one c/5. In three Caernarvonshire sites there were five broods of 3 young and six of 2. Only one c/5 is noted for Scotland, at Carsphairn (Kirkcudbright). In several cases second broods were noted, as shown in the Index to Information.

MORTALITY.

Mortality in the nest is evidently very variable and sometimes heavy. The youngest of a brood is often a weakling and is liable to meet an early end. In a gale young are often blown down, and they are apt to fall even in perfect calm. At Trevelver (Cornwall) five were killed in this way in 1926 among a colony of five nests. It is noted at Chilham (Kent) that if the young fall they never attempt to use their wings, but drop like stones and are killed. At Bowood (Wilts.) a young bird accidentally hanged itself. At

Scampston 5 or 6 deserted in the snowstorm of March 11th-12th, and as they *rebuilt*, had not hatched by mid-May.

In severe weather the adults perish to a remarkable extent, and this has been very marked in the winter of 1928-29. At Broomhall (Caernarvon), the keeper found 5-6 dead or dying Herons in the frost of December, 1927; in Northumberland an observer records having found one with a leg actually frozen fast where it had been fishing, which took some time to recover after it had been released.

NON-BREEDING STOCK.

Not many observers ventured to express an opinion on this difficult question, but such data as we have received show good reason to suppose that the proportion of non-breeding birds is liable to vary in different localities (perhaps also in different seasons) between a considerable figure and an insignificant one.

At Boreham House (Essex) a considerable number of birds present take no interest in breeding operations and spend most of the day standing about in neighbouring fields and marshes; they roost in trees about a quarter of a mile from the heronry. In 1927 and 1928 this applied to quite 40 per cent. of the birds. At Ford House (Beds.) there are about 4 birds attached to the colony of 10 which do not breed. At Eridge (Sussex) 23 were counted on February 23rd, but only 8 pairs bred; at Parham there are very few non-breeding—say 5 or 6 against 58 nests. But in the Beaulieu area of Hants. there are at least twice as many non-breeding as breeding; at Clumber (Notts.) about one-third fail to breed; at Gisburn (Yorks.) the proportion is probably about 15 per cent. of those nesting, and at Flasby probably 20-25 per cent. In Cumberland they are estimated at about 25 per cent. round Cockermouth, but apparently none at Muncaster. There are none at Ince Blundell (Lancs.) and very few in Somerset at present or at Warleigh (Devon); at Trevelver (Cornwall) the number is said to vary annually, and to have been *nil* for 1928.

In Glamorgan Mr. G. C. S. Ingram, while watching from a hide on May 5th, 1925, saw two immature birds visiting the nests and being driven off by the owners; these and 2-3 others were seen several times on later dates, and appeared to be hanging round on the off-chance of picking up food. In N.W. Wales there are very few, if any, in the Menai Straits region; only one bird was met with which might possibly have been non-breeding.

In the Scottish Isles non-breeding stock is very considerable; thus, in Orkney, many are seen at places where they could not possibly be breeding; on North Uist, where they have only bred in recent years, there has always been a large non-breeding stock,

and still is ; on S. Uist there are about 50 non-breeders against 18 breeding pairs. At Woodcockair (Dumfries.) the ratio is thought to be roughly equal.

DATE OF BREEDING.

Little information was received regarding the date of arrival at the heronry. However, Major H. O. Peacock supplies a list of arrival dates at Stanford Hall (Notts.) between 1915-28 inclusive. The earliest note of detachments arriving occurs on January 16th (1923 and 1927—in the second case they left again) ; the latest is February 14th-23rd, 1919, and February 15th (final occupation), 1927. For permanent settlement there are nine dates in January and only five in February. At Halleaths (Dumfriesshire) they arrive with the utmost regularity in the first week of February each year.

At Wassand (Yorks.) thirty-five years' observation gives the earliest date for eggs as February 28th (c 4). At Ronay Island, N. Uist, a new-laid egg was found by about February 17th. At Trevelver (Cornwall) not more than 4 clutches out of 10 were complete by March 21st, and at Sheviok only 1 out of 4 examined had young by April 10th. In Caernarvonshire at Vaynol, 6 nests out of 14 were occupied after March 23rd ; but at Treguff (Glamorgan) 6 nests out of 7 hatched by April 7th. Many counts prove that fresh nests continue to be added quite freely throughout April in a large number of colonies. Odd nests may contain new-laid eggs well on in June, as at Holbrook Grange (Warwicks.) ; an odd nest near Newbridge (Radnor) in which two young were reared during 1927 was not built till June. At Parham (Sussex) three broods were still unfledged on July 2nd ; at Scampston (Yorks.) they are in the nest some years till early August ; the same is recorded at Kirkmichael Barony and at Halleaths (Dumfriesshire) where in 1928 young were heard which sounded "not more than a week old on September 15th."

DISTRIBUTION AND MOVEMENTS.

SITES OF HERONRIES.

Question 15, which inquired into the nature of the nest-site, was one of the most widely answered, and while the data collected are scarcely exact enough for elaborate analysis, they present on the whole a remarkably good picture of the present state of affairs in the British Isles. Naturally, an overwhelming majority of the nests thus accounted for are in trees, amongst which the choice is fairly catholic. In England the most favoured appear to be oak and Scots pine, followed by larch, spruce, ash, elm, beech, Spanish

chestnut, sycamore, horse-chestnut, wild cherry, alder, yew and Douglas fir. In Wales, Scots pine, spruce and other conifers are the most frequently recorded, and out of nineteen sites returning information only one is in oak, two partly in beech, and one (the largest) in ash and sycamore. Out of 17 in trees 11 are completely and two more partly in conifers. In Scotland, where details relating to 1928 are more meagre, 10 colonies were returned as being in Scots pine, 7 in beech, 5 each in larch and spruce, 3 in oak and 2 each in Douglas and silver fir. In Ireland, oak occurs only in 3 minor cases, spruce in 3, Scots pine in 5 and beech in 9, but the sites are rather more mixed than the majority reported from elsewhere.

To list the heronries occurring in each kind of tree would take up too much space, but for the benefit of anyone interested these details are briefly indicated by the code of notes contained in the Index to Information (*antea*, p. 318). Certain cases occurred too rarely to be allotted any distinguishing sign; these are grouped in the Index either under "other deciduous trees" or "other conifers" as the case may be, and a list of them in detail now follows. Coley Park (Berks.) is in plane trees. One or two nests at Eaton Hall (Cheshire) are returned as in willow,* and two or three as in birch, which is also noted at Saints Island (Co. Mayo) and Fawley Court (Bucks.). Poplar occurs in the case of isolated nests, no longer extant, near Dunster (Somerset) and at Leadenham (Lincs.) in 1925. In 1927 the latter nest was in a very large thorn, a site only otherwise noted at Ormidale (Argyll) and in two colonies, one flourishing, the other extinct, on L. Carra (Co. Mayo). Holm oak is preferred at Rathfarnham (Co. Dublin); at Tawnyard Lough (Co. Mayo) the nests are in low holly. Some of the nests at Stadson (Devon) are in blue pine; at Knighton Heath Wood (Dorset) in maritime pine; at Sowley Pond and Hinton Admiral (Hants.) in pinaster, and at Claggan Wood (Co. Mayo) in Austrian pine. Swarland (Northumberland), some at Mount Stewart (Co. Down) and the former colony at Peper Harow (Surrey)—perhaps also that at Attingham (Salop)—belong to silver fir; while a former isolated nest at Aldwinkle (Northants.) was in cedar, as were some of the nests in Warwick Park about 1850. Spixworth (Norfolk) is recorded to have been in Portugal laurel; and Hickling is in a tangle of honeysuckle at the top of a small oak. Not infrequently the trees in which nests occur are ivy-clad; on Attorvally Island (Co. Mayo) and perhaps at L. Shin (Sutherland) there are nests in low bushes.

In England no nests of 1928 were noted as having been placed on the ground, but instances of former breeding in reed-beds occur

* They were nearly all in willows *c.* 1899 (Coward and Oldham).

at Aqualate (Staffs.)—2-3 for several years prior to 1892; Warleigh Wood (Devon), where two young were hatched in this position in 1916, and at Sherborne (Dorset) as lately as 1927.

In Wales cliff sites exist at Solva and Porth Lisky, and an extinct one at Linney Head, all in Pembrokeshire; there are others immemorially deserted, at the Great Orme (Caernarvon) and at South Stack (Anglesey). In Scotland two exist at Lyre Geo (Orkney) and Badcall Bay (Sutherland); there are, of course, others not included in the present returns, both in Scotland and Ireland. In Kintyre and the Outer Hebrides we find colonies amongst heather on the ground, but no examples occur among the returns from England, Wales or Ireland.

The preferences which emerge from this mass of data are not very striking. Attention may be drawn, however, to the fact that the majority of the numerous Thames Valley stock cling to oaks or other deciduous trees; and that out of the four largest British heronries, one is purely, and two more chiefly, in oaks, the other being purely in Scots pine. With completer data it might be possible to trace some local preference for beech in parts of Scotland, Ireland, and western England which is conspicuously absent elsewhere, except perhaps in Sussex and Kent. But preferences at best appear to be shallow and inconstant; certainly there can be no question of a stock in which attachment to a certain tree is hereditary and ineradicable. Thus we have cases, as at Goodwood (Sussex) or Borcham House (Essex), of a colony gradually going over from deciduous to coniferous trees, and vice versa; earlier examples of the same process are recorded for the extinct sites of Rydal (Westmorland) and Walton Hall (Yorks.). A dislodged colony often, but not by any means always, resettles in the same kind of tree; Slebech Park (Pembroke) and Badcall (Sutherland) provide instances of migration from a sea-cliff to trees and vice versa, if their pedigrees are correct.

At the long vanished colony of Cressy Hall (Lines.), Pennant on June 27th-28th, 1769, observed upwards of 80 nests on a single oak, but there is no indication that any such spectacle could now be seen in any part of the country, and wherever the number of nests per tree is noted it is always fairly low. In Warwick Park, where about 1850 some elms held 12-14 nests each, the maximum in 1928 was 4, and there were 20 occupied in fifteen trees, giving 1.75 per tree. At Ragley Park and Combe Abbey (maximum 3) the 1928 average was even lower. At Combermere (Cheshire) between 1924 and 1928 the maximum fell from 6 to 4 and the average from 2.6 to 2.05. At Birch (Essex) among 125 nests on April 16th, 1888, 8 was the maximum for one tree. At Chilham (Kent) the average is said to be 8 or 9. Fawley Court (Bucks.) which had 73 occupied in thirty-two trees—an average of only

about 2.2—had the largest noted figure with 13 occupied nests (and 1 unoccupied) in a single wild cherry ; at Brockley Park (Somerset) four ash trees averaged nearly 5 nests each and one contained 17 nests—6 occupied and 3 old Herons' and 8 Rooks'.

PEDIGREES OF HERONRIES.

When a heronry is broken up several possibilities arise ; it may mean the end of the local breeding stock, or the birds may disperse into solitary pairs and odd groups of an impermanent nature, which has recently happened in the north on a scale very embarrassing to the census, or they may migrate and resettle as a community. If they disperse, the tendency for fresh heronries to arise will be postponed, and may indefinitely be checked by adverse circumstances, but it will not disappear, being inherent in the nature of the species. Thus at Wytham (Berks.) the heronry was broken up in 1920 and took to nesting scattered in the woods, but it has now crystallised at one point and is again highly concentrated. Some heronries, such as Trenant (Cornwall), are very scattered now, but it is doubtful if this will prove permanent. One proof of the centripetal tendency is the rapidity with which many colonies grow in their early stages, which is considerably in excess of their own production of surplus pairs at the time. Where migration as a community occurs, unless the distance between the two sites is very short, doubt may arise as to the origin of the heronry. Thus the Parham birds are said to have migrated early last century from Penshurst (Kent) to Michelgrove (Sussex) and thence to Parham. The second journey, which is only a few miles, sounds plausible enough, but it is difficult to see how the first can ever have been proved, since Penshurst and Michelgrove are 35 miles apart. Not only is the distance considerable, but it hardly seems reasonable to suppose that until after 1800 there was no heronry commanding the outstandingly favourable Amberley Wildbrooks, and the valley of the Arun ; much more probably the birds came to Michelgrove from some other local site unknown to Horsfield, from whom all successive writers on the subject seem to have copied the statement *verbatim*. Eridge Park (Sussex) seems more likely the real successor of Penshurst. In the same way Rydal (Westmorland) is alleged to have been founded from Ravensworth (Durham) about 1855 : we have failed to find indications that this is based upon anything more than a coincidence of date. The alleged migration of Acle (Norfolk) to Keswick about 1810 is not free from suspicion of the same sort ; although the distance involved here is considerably shorter there seems no reason why this colony should not be traced to one or more of the various groups which were settled during the nineteenth century much closer to Acle.

We find three colonies stated to have been artificially started by birds brought over for the purpose. The first of these is Penshurst (Kent), already referred to, which is supposed to have originated from stock brought by the steward of Robert Dudley from Coity Castle, South Wales, in the time of Elizabeth. In the second case the flourishing colony of Hamilton Wood (Lancs.) is said to have probably arisen from captive birds brought from Hamilton Palace, Scotland, at the beginning of last century. The third, Wootton (I.O.W.), is supposed to have been introduced within living memory, but details of the origin of the parent stock are not given.

DISTRIBUTION AND MOVEMENTS.

The present distribution of heronries in England and Wales is best represented by the maps facing p. 270 and 364. For movements, see Results of Marking Herons, p. 300. Other data simply confirm the generally apparent seasonal dispersal of the nesting colonies, and do not indicate any conspicuous influx into or emigration out of definite regions, except in Orkney, where the immigration after the breeding-season confirms the northward drift suggested by the marking records.

ALTITUDE OF HERONRIES.

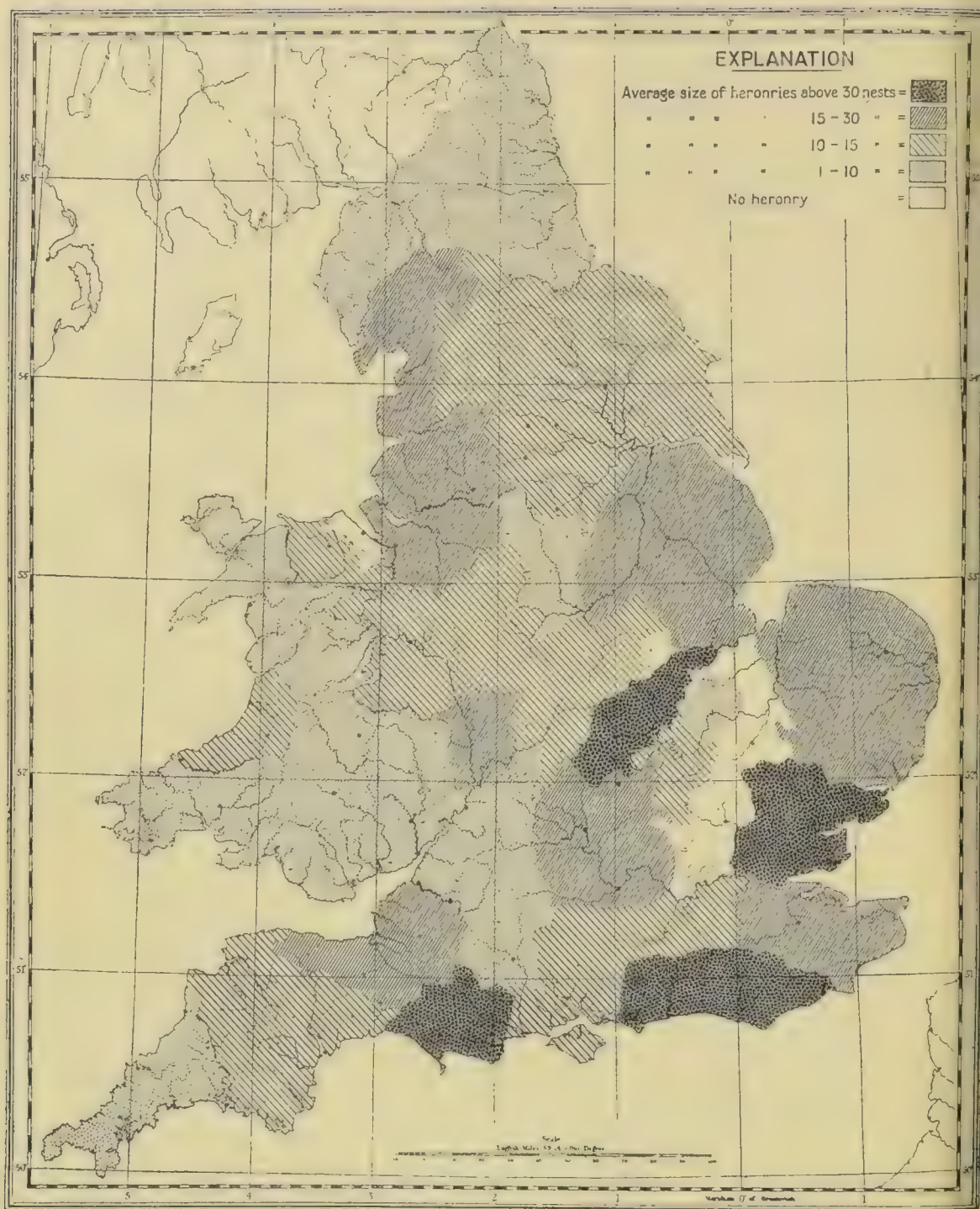
The altitude at which Herons breed was not made a particular object of enquiry, yet a few data on the subject seem worth including. Goodwood (Sussex), which is all above 500 ft., must be easily the loftiest first-rate colony. Wytham (Berks.), which is also not inconsiderable, is just below 400 ft. But the great majority of the larger heronries are much nearer sea-level, and many of them within 50 ft. of it. Among smaller groups some much greater altitudes are obtainable. Shirley Wood and Eaton Wood (Derby—the second now extinct) are both about 500 ft., while the single pair at Exford (Somerset) breed at about 1,000 ft.

In Wales the steepness of the slopes on which the loftier heronries often stand makes it difficult to fix altitudes even approximately, but Venny Fach, the largest colony in Brecon, is over 500 ft., Glanwye 400, Sennybridge over 600, Penybont and Wainddu Common (Radnor) both between 7–800 ft.

In Scotland, Carsphairn (Kirkcudbright) is about 750 ft. up. This list, of course, is in no way exhaustive.

AGE OF HERONRIES.

No doubt many heronries which are simply immemorial, and have no known pedigree, may have occupied the same site for several hundred years, but we can take account only of those colonies which have some recorded history. Among these, Chilham (Kent) seems



Sketch-map of England and Wales: counties shaded according to average size of their recorded Heronries in 1928.

to have the best claim to be called the oldest : it existed before 1293, and we know no reason to believe that its continuity has been interrupted since. Aldershaw (Sussex) is close to the locality where another considerable heronry existed, also in the reign of Edward I. ; here we know that the site has shifted several times, but the modern colony may well be the lineal descendent of the ancient one. In Scotland, Dawyck (Peebles) dates from before May 31st. 1497. Allers Wood (Somerset) can be traced back to 1545, and others to Elizabethan times, including Windmill Hill (Sussex), Althorp (Northants) and the unstable heronry on the Orwell, at present near Nacton (Suffolk), the earliest record of which appears to be an order for its destruction by the Privy Council on the petition of the burgesses of Ipswich. Muncaster (Cumberland) and Aqualate (Staffs.) are recorded during the seventeenth century : Dallam Tower (Westmorland) and Highmead (Cardigan) go back at any rate to the middle of the eighteenth ; at least a dozen extant heronries in England and three in Wales can claim to have originated before 1800, and research may yet add several more. The foundation dates of existing heronries, so far as they are known, will be found in detail in the county tables, or grouped according to period in the Index to Information.

EXTENT OF FORAGING RANGE.

Although a mass of material was sent in upon this point it is necessarily of such a local nature that we cannot attempt to publish it in detail. There is found to be great variation in the practice of different colonies ; at some the birds are said to feed entirely within one or two miles of the nests, while at the other extreme we have heronries like Lyre Geo (Orkney) on an iron-bound coast, or Goodwood (Sussex) on waterless downs, with no possible feeding-place within $2\frac{1}{2}$ miles in the first case or 5 in the second. There is good evidence for several colonies foraging regularly up to 10 or 12 miles, including Chillingham (Northumberland) on the shore, 8 miles, Otmoor (Oxon.) 8-9 miles, Ince Blundell (Lancs.) on Dee flats, 10 miles ; Harewood (Yorks.) 9 miles ; Hinton Admiral (Hants.) on Solent, 8-9 miles ; Parham and Goodwood (Sussex) on coast, 8-12 miles. Archerton (Devon) birds are thought to feed on Plymouth flats 17 miles, and Swarland (Northumberland) birds up to 16 miles, while at Stanford Hall (Notts.), the Wash, 60 miles, is given as a regular feeding-place ; but further investigation seems desirable of cases where the range is supposed to exceed a 12-mile radius. In some colonies, as at Colwick (Notts.), the foraging area shifts farther afield as the season advances, and it is suggested that the end of the frog-spawn season may have something to do with this. But most reports state that the feeding-

place does not change; there is some evidence that definite birds may have regular stands, as at Highmead (Cardigan) and in Caernarvonshire, where a bird from Penrhyn is said to have fed every evening for weeks on the territory of the Vaynol colony, which is 5 miles away. Another case where overlapping is reported is at Exmouth reservoir (Devon), given as a feeding-place for Salston (*c.* 7 miles) and Eastdon House (*c.* 5½ miles).

RESULTS OF MARKING HERONS.

Under the "BRITISH BIRDS" marking scheme, there were ringed in the British Isles 306 Herons in the period 1909-27 and a further 346 during 1928. Out of these, up to the end of 1928, there had been 44 recoveries reported, giving a recovery percentage of about 6.6 over all. Up to the end of 1926 the rate was 14.3, and the sudden drop is obviously due to the very creditable effort made during 1928, the results of which have not yet had time to make themselves felt*. These 44 records, therefore, represent an appreciable fraction of the birds marked. They throw light principally upon two aspects considered in this Report under the heads of

* Since this section was written, during the first two months of 1929, eleven more recoveries have been notified. At least five, and possibly eight, of these died directly as a result of the severity of the winter, by which the movements of a ninth were probably also influenced, and to include so large a batch of abnormal records would clearly upset the norm resulting from the entire twenty-year period preceding; they are accordingly only added to the statistical table, and otherwise dealt with separately in this note, on the same lines as those for 1909-28. Taking the causes of death first, two were found exhausted and three dead in circumstances which left no doubt that they had perished through the frost, three more were "found dead" simply, and two (probably three) were shot. It will thus be seen that the order is temporarily reversed; out of these eleven almost as many perished certainly or possibly from natural causes as among the forty-four reported during the previous twenty years. The eleven new recoveries are without exception first-year birds, which is not perhaps surprising in view of the record number of marked birds of that age about. Among movements, the principal addition is Ireland, formerly a conspicuous gap, where one bird from Dumfriesshire was shot (Co. Antrim) and another from Fawley Court (Bucks.) found dead in Co. Meath during January-February, 1929. It remains to be seen whether such a migration occurs at all regularly, apart from the frost with which it in this case coincided. The tentative generalisation that no Scottish birds have been recovered in the rest of Great Britain or abroad remains, surprisingly, unaffected by the winter; four more Scottish birds are reported, at least two having perished in the frost, but apart from the Irish recovery already mentioned, all are in Scotland not very far from the place of marking. Three more Cumberland birds are reported, one from Eaton Hall (Cheshire) and Fawley Court (Bucks.) perished near the native site. The remaining record is a further Aldershaw bird in France (Pas-de-Calais). Among separate heronries Aldershaw has now six recoveries (all abroad, and still the only foreign records for British-marked Herons) and Floriston has ten.

"Movements and Distribution" and "Relations with Man," but it has been considered more convenient to keep all the information derived from this special source in a separate section by itself.

To dispose first of the causes of death, it is evident that direct human agency has been very largely responsible. Twenty-seven out of the 44—over 60 per cent.—were definitely "shot" or "killed"; 4 were netted or captured (including one again released) and 9 were "found dead"; in addition, there are 3 cases where no reason is stated and 1 of accidental death (on telegraphs). The fact that 66 per cent. of the "found dead" or "not stated" entries refer to the small minority of Scottish returns, and only the residue to the overwhelming majority of English ones, is more reasonably to be traced to a difference in the character of the inhabitants than in the fate of the birds. It is noteworthy that 34 out of 44 recoveries have occurred during the first year out of the nest, which strongly suggests that wariness is learnt by bitter experience rather than inherited as an instinct. The tameness of Herons in localities where they are not persecuted bears this out, and the disproportion is all the more striking in view of the fact that a Staffordshire bird has been killed in its sixteenth year. While many natural deaths may escape human notice, it is difficult to doubt, on the other hand, that ringed Herons are frequently killed without being reported, and if we could feel justified in taking these results as a fair sample they would indicate that probably not more than a quarter of each generation, and perhaps only 10 per cent. of it, can survive on an average to take any part in reproduction. The summer Heron population, therefore, seems to consist of a small minority of wary, experienced old birds, which go on breeding season after season, and a great mass of inexperienced juniors, of whom three-quarters or more are doomed to early destruction. But, pending further investigation, indications of this sort must not be taken too definitely.

Turning to Movements, it is clear that dispersal after fledging is immediate and far-reaching. There is no evidence that this redistribution is in the direction of areas of low Heron population, as might be expected on the assumption that it is dictated by food-supply. On the contrary, we find several recoveries from elsewhere in counties like Cheshire and Lincoln, which have quite a high Heron population, and even in the neighbourhood of other Herons, as in the case of the Borcham-Thame and Otmoor-Weston-super-Mare records (*antea*, Vol. XXI., p. 295). Only the records of first-year birds from Essex, France and Denmark, on the upper Test and Salisbury Avon, suggest the possible magnetic influence of a good fishing area not commanded by a breeding colony. It is significant that there is no case of a Heron ringed in Scotland and

recovered in England or Wales, the most considerable movements among the eight records being from the mainland to the Hebrides and from the Lowlands to the Highlands—north or west rather than south. On the other hand, 4 native English Herons have been recovered in Scotland and 5 on the Continent—that is, just a quarter of the total returns are outside England. Of Herons ringed abroad at least 3 have been recovered in the British Isles, one from Zealand, E. Denmark, at Amesbury, Wilts., in its first autumn (1910); one from Pas de Calais at Laverstoke, Hants., in its first autumn (1927), and one from S.W. Sweden in Yorkshire in its second spring (1928).

In addition, the records give some glimpses of the heronry as a unit. A Heron native to a certain Northumbrian colony was shot while incubating there in its fifth spring, while on the Solway a bird native to one colony was recorded during the breeding season at or very near a different colony. Of single heronries, Consall, near Cheadle (14), claims almost a third of the British recoveries to date, due to the ringing operations of J. R. B. Masefield during 1909–13. Only one of these recoveries occurred in Staffordshire, and that after nearly sixteen years, but 7 were in adjoining counties (Cheshire 4) and of the rest 2 were near Lincoln, 1 in S. Gloucestershire, 1 in Radnor, 1 near Morecambe, Lancashire, 1 near Leeds, and 1 near Daventry, Northants. Floriston (Cumberland) has 8 records, 2 from the Highlands, 1 from co. Durham and the rest locally; while the ringing operations at the great Aldershaw heronry in Sussex on April 22nd, 1928, have yielded already 5 recoveries abroad, 2 each from France and Belgium and 1 in Spain (details *antea*, p. 183), these being the only records of British-ringed Herons occurring outside Great Britain.

The accompanying table shows under a broad regional classification the recovery localities of marked Herons so far as the British Isles are concerned. From this it will be noticed that the great majority of the records, including all the more remarkable movements, refer to first-year birds; that north and west England, Scotland and Wales, have an excess of “immigrant” journeys (notwithstanding the fact that most recoveries occur in winter) while the Midlands and south England have an excess of “emigrants”; and that, so far as any drifts can at this stage be discerned, they appear to tend northwards and westwards, except in the extreme south, where there is evidently an appreciable cross-channel migration. In view of the likelihood of a great increase in records in the near future, more detailed analysis would be premature; this table includes all recoveries notified before March, 1929, whether dealt with in the body of the text or added in the note.

RECOVERIES OF MARKED BIRDS.

Marked as Nestlings in	N. England.	Midlands.	E. England.	S. England.	W. England.	Ireland.	Wales.	Scotland.	France.	Scandina- via.	Belgium.	Spain.	TOTAL.
N. England ...	7+2	—	1	—	—	—	1	5+1	—	—	—	—	16
Midlands ...	5+1	2+2	2	—	1+1	—	+1	—	—	—	—	—	15
E. England*	—	1	—	1	—	—	—	—	—	—	—	—	2
S. England ...	—	1	—	1	—	1	—	—	3	—	2	1	9
W. England ...	—	—	—	—	1	—	—	—	—	—	—	—	1
Scotland ...	—	—	—	—	—	1	—	9+2	—	—	—	—	12
France ...	—	—	—	1	—	—	—	—	3	3	3	3	1
Scandinavia ...	1	—	—	1	—	—	—	—	3	3	3	3	2
Total ...	16	6	2	4	3	2	2	17	3	—	2	1	58

N.B.—Only birds marked or recovered in the British Isles are dealt with in this table. All records refer to first-year birds except those which follow a plus (+).

* A privately-marked bird from Lincolnshire is¹ said to have been shot in E. Suffolk c. 1854 and another to have been found on the Danube, near Vienna, about the same time (Babington).

HERONRIES ABROAD.

The Heron is a very widely-distributed species, and it would be possible almost to double the length of this Report by an adequate review of overseas data in comparison with the material here presented. That, of course, is out of the question, and suggestive as such a survey would be, much more precise work needs to be done both here and abroad before anything conclusive could be arrived at by it. Yet, in considering the results of the present census, it is necessary to bear in mind other work on the same lines that has already been done in the countries of western Europe, a full bibliography of which will be found in *Ardea* (1926), Vol. X., pp. 144-7. Since 1926 the most notable additions have been Chevalier Van Hayre's work on Belgian birds, which gives details of the Belgian breeding stock, and Vagn Holstein in Denmark.

No attempt will be made to analyse, or even to summarise these results, but a few facts may be quoted. In Holland there were in 1925 127 recorded breeding sites, of which 88 had six or more nests; 17 had a hundred or more; 8 had over two hundred, and 4 had over three hundred. Of these, Gooilust, in Noord-Holland, had 1,035, and although even larger colonies of this species may exist on the Danube and elsewhere, this is undoubtedly by far the largest in western Europe. The total for all Holland was about 7,245 occupied nests, or 22.8 per 100 sq. km. This density is far in excess of that hitherto recorded for any other country. Belgium has only about 264 nests in six colonies, much the largest being Beirendrecht, near Antwerp, which had 214 in 1920, but has since fallen to about 150.

In France, the famous heronry of Champigneul, which in 1864 had 172 nests to a single hectare of ground, has fallen to about 30. There are now two French colonies of about 100 nests and the total breeding stock is reckoned at about 350. Thus, while Holland has just about double the Heron population of England and Wales, France has only about the same number as Norfolk, and Belgium slightly less than Sussex.

In Denmark, the next nearest country to England, the number of breeding pairs was found to have increased from 610-710 in 1912, to 1,362-1,410 in 1927, and the number of colonies of 80 pairs or more from 2 to 7, the largest having 175 nests.

Brouwer in Holland finds that in mixed woods conifers are preferred; that this is not necessarily the case in England is abundantly illustrated on pp. 318 and 353. Poplars, which are much favoured for heronries in north Holland, are very exceptional breeding sites in England; reed-beds are exceptional in both countries, Holland having only two colonies of this sort and England none regularly. The speed with which large colonies may spring up, although observable on this side, is best shown in Holland, for Gooilust increased from 1 pair in 1896 to 1,035 in 1925.

SUMMARY AND CONCLUSION.

It has been proved possible to carry out a national bird census in England and Wales with a satisfactory degree of completeness and accuracy. This result, however, was only obtainable by restricting the inquiry to one peculiarly suitable species, and by a system of local decentralisation which might with advantage have been extended even further than it actually was. Both the number of observers responding and the extent of their response proved, on the whole, very satisfactory.

There were ascertained to be occupied sites in every English county except Cambridge, Hertford, London, Middlesex and Rutland, and in every Welsh county except Flint. In all, 254 occupied sites were counted in England and Wales, containing 3,744-3,843 occupied nests. Allowing for a possible margin of error, the number of breeding pairs of the Common Heron in England and Wales for 1928 may be put as between 3,600-4,000, and other data which are not, however, adequate for the purpose, allow us tentatively to estimate the entire Heron population, adults and young, at about 20,000 birds, or roughly 1 to three square miles, the human population of the same area being 2,000 times more dense. There is no reason to suppose that any serious general decrease is at present taking place, but there are local declines on a serious scale and there is no doubt that without human persecution



etch-map of England and Wales showing density of breeding Heron population in the various counties, 1928.

the stock might be considerably increased. The mass of the population is concentrated in the south, the five leading counties—Norfolk, Somerset, Sussex, Essex and Devon—holding about one-third of it between them. A remarkable number of heronries, including four out of the six largest, are on or near tidal waters; here they are comparatively immune from persecution, and the artificial selection operating in favour of littoral or estuarine heronries, as opposed to fresh-water ones, is evidently strong. In some counties, notably Derby, Gloucester and Hampshire, where the Heron population is unexpectedly low, human agency is apparently responsible, but in the very curious corridor of counties having no Heron population whatever, extending from the Thames to the Wash, this is certainly not the explanation.

In many administrative counties and county boroughs the Heron is nominally protected, but this legal protection is not by any means invariably enforced. It appears useful where only casual gunners and mischievous persons are concerned, but where important fishing interests are involved becomes more or less a dead letter. On the other hand, an extra-legal protection is very generally conferred on the heronries by those possessing them; here no amount of legislation could effect any important improvement, but since heronries suffer much from modern changes of ownership it seems desirable that the present standard of conservation should be secured to them by Act of Parliament. Although suffering from considerable annoyance by the Rook, Carrion-Crow, and locally other species, the Heron has no serious enemies or competitors in the British fauna. Heronries, which in this country rarely exceed one hundred occupied nests, are usually situated in trees, and in spite of the amount of data collected it is not possible to say that any particular kind is universally preferred. Scots pine and oak seem the most popular. Marking has shown that the Heron may live up to at any rate sixteen years; that a certain number of birds from the Continent are found in this country, while only natives of a Sussex heronry have so far been traced on the opposite journey; and that, while a considerable number of English-marked birds have occurred in Scotland, no Scottish ones are known to have occurred in England so far.

RECOMMENDATIONS.

The census would have a purely academic interest if it did not point to concrete measures by which the problems indicated may successfully be dealt with. We tentatively suggest the following practical corollaries:—

- (A) *Regarding the Census itself.*—Another complete census of British heronries should be taken not later than about 1940, if the full benefits of this one are to be reaped. In the meantime the sites in Scotland and Ireland should be thoroughly worked out, and an

organisation developed for covering them at least as accurately as England and Wales were covered in 1928, so that a complete census of the British Isles can be undertaken in a single year. Further, a complete local census should be maintained, annually if possible, in at least half-a-dozen counties in different parts of the country, among which it will be well to include Norfolk, Sussex, and Somerset.

The 1928 Schedule and the definitions and treatment laid down in this Report ought generally to be conformed to for the sake of keeping comparable records, but the following amendments are desirable in the Questionnaire:—

- (i) There should be a space for name and full postal address of observer.
- (ii) The first sentence of Question 3 should be altered to read "In what year was this heronry first occupied? (If unknown, state how many years back it can be definitely traced, and any clues to its origin that can be found. Information already published in the 1929 Report is not required)."
- (iii) Questions 10–12 and 16 should be omitted, being within the scope of the economic inquiry later to be discussed.
- (iv) Question 14 should read "Does a rookery adjoin? If so, how close are the two colonies, and what are the relations between them?"
- (v) A question might be added: "In the case of colonies more than c. 400 ft. above sea-level, state altitude as precisely as possible."
- (vi) A question might be added regarding relations with other animals on the lines suggested on pp. 341–350.
- (vii) A question might be added regarding dates of arrival at the heronry in different years, where known, in order to ascertain how far these synchronise in different localities.
- (viii) A general question might be added regarding seasonal movement.

It might be convenient in working up results if the present numbering could be retained as far as possible, the added questions being simply substituted for the abandoned ones.

- (F) *Economic Investigation.*—There ought to be an adequate inquiry into the economic status of the Heron, covering stomach contents, pellets and food observations relating to all regions and seasons. This can hardly be privately done; the Ministry of Agriculture and Fisheries should appoint a competent full-time investigator to deal with it once for all. Failing that, the next best solution would be for some efficient research student enjoying laboratory facilities to undertake it of his own initiative, if necessary securing some existing or special biological endowment to subsidise him. Such an inquiry should be extended over at least three years. Expert analysis of pellets on an adequate scale might be begun without delay if trained zoologists would take it up. It need scarcely be pointed out that the economic inquiry here suggested, if accurately carried out, could be used in conjunction with the census totals to ascertain pretty closely the actual consumption of the Common Heron in England and Wales in quantitative terms, so that its ecological and economic status would be more precisely calculable than that of any other animal we have. This economic inquiry is the essential complement of the census, and we therefore commend it very strongly to any zoologist who may possess the training and the ability to

carry it out, as being one of the most valuable researches open to him. If this appeal is not responded to, a very great opportunity created by the efforts of more than four hundred observers will have been thrown away.

- (c) *Protection*.—As the Heron is shown to be in no very serious danger at present, comprehensive legislation on this subject should await the result of economic inquiry, and be chiefly determined by it. In any case it is hardly likely to work very efficiently so long as existing conditions prevail, as will be seen from a comparison of evidence summarised in *Relations with Man* with the nominal legal position to-day. There are, however, two substantial protective measures which might be initiated without delay. First of all in view of the wholesale dispersal of heronries through felling and the threat to important colonies caused by the buying up of parks by building speculators, and so on, it seems highly desirable that the protection which these colonies have in practice generally enjoyed should receive legal force. No opposition would be likely, and while the best method of achieving that end is a difficult point, it seems possible that something analogous to the scheduling of Ancient Monuments, covering all heronries of "ancient" date and all of, say, forty nests or over, so that they could not be interfered with by anyone without the prescribed notice being given, would meet the case better than a conventional protection law. It ought not to lie within anyone's power suddenly to destroy, without warning, a heronry which is one of the finest in the country, or has been protected with care for generations.

As we have already shown, there is not the least reason to anticipate any danger of this sort so far as the great majority of present landowners are concerned, but protection is certainly needed against the site exploiter, and the break-up of old estates among new types of landlords and tenants. Both the Forestry Commission at the one extreme and the smallholder at the other have given some reason to be viewed with apprehension on this account; the Commissioners in particular will control the destiny of so many heronries that some definite assurance on their part would be a valuable safeguard. It is unreasonable to expect that economic forestry should invariably yield to the desire for protecting every existing heronry undisturbed, especially since the birds will so often merely shift a short distance and settle down again, yet nest-trees ought never to be felled in the breeding-season and there are certain colonies which ought to be preserved, even at considerable sacrifice.

The second protective measure, and probably the most practical, is to develop methods by which trout hatcheries and other vital fishing interests can be made Heron-proof without recourse to shooting the birds. Fifty years ago wire-netting was used on certain streams with success, and we are told that elsewhere at the present time wires are used to thwart wading Herons, except at a particular gap, where a man with a gun is posted. As the Heron's operations are restricted to shallow water and his motions are comparatively easy to obstruct, it ought not to be beyond human ingenuity to devise a cheap and efficient means of protecting all essential parts of river fisheries against him. We commend the practical study of this problem to the many landowners and others who have shown themselves anxious to preserve the Heron so far as, or even a little further than, their fishing interests in their opinion permit. The Editors of *BRITISH BIRDS* will willingly do everything in their power to com-

municate the knowledge of any practicable solution which may be submitted to them.

Unless an exhaustive economic inquiry had been completed, and had established beyond question that the Heron is, on balance, definitely beneficial, we should hesitate to recommend any sweeping attempt to tighten up the protection orders and suppress all destruction of Herons by more stringent administration of the law. It is quite clear that many who would like to protect Herons absolutely feel compelled to destroy a certain number in self-defence, and in these circumstances any strong legal action must either collapse or give rise to widespread and not unjustified resentment. The sentiment of fishing interests was well demonstrated in March, 1928, at the Ninth Annual Meeting of the National Association of Fishery Boards, when a proposal that the Government should be asked to discontinue protection of the Heron was rejected by a large majority, receiving only seven votes. Accordingly, while all cases of wanton shooting by casual gunners, sportsmen and others ought undoubtedly to be proceeded against, we do not consider that it would be either fair or politic to attack the position which the Fishery Boards and landowners concerned have generally taken up. We feel sure that the best way of putting an end to the excessive slaughter of Herons undoubtedly prevalent in several areas lies not in the direction of compulsory powers which might prove to be not even nominally obtainable, and must in any case be extremely difficult to apply, but rather in avoiding recriminations and enlisting the co-operation of interested parties towards some solution along the lines indicated above.

Certainly the conservators and others who are willing to pay rewards of 1s. to 10s. a head for Herons have a clear obligation to give financial support to any workable invention for guarding their fisheries against Herons, and to adopt it fully as soon as its efficiency is proved. And if, as is not improbable, that efficiency falls well short of 100 per cent., it has always to be borne in mind that the efficiency of the killing system is itself extremely low; the very number of birds which may be killed at one spot proves, not the value, but the futility of a policy which merely destroys one bird in order that another may promptly take its place *ad infinitum*. And as no one in fisheries or outside them is likely seriously to contemplate the total extirpation of the Heron in Britain, it follows that local massacre, however thorough, can never really work. Even in the counties where the entire breeding stock has been annihilated by the gun our observers are unanimous that the Heron population, far from vanishing, remains almost, if not quite, as abundant as before, and they find this condition so striking that they have generally had great difficulty in satisfying themselves that so many birds were really not breeding somewhere unknown. This is a remarkable fact, and one which ought to be more widely realised. It is not, then, a question of supplanting an efficient, if unpalatable system, by a less ruthless one which may have some imperfections; whatever the efficiency of an alternative policy the inefficiency of the present one is manifest. A large sum of money is expended every year, quite uneconomically, on paying rewards for Herons' heads; if an equal sum were offered for a satisfactory method of guarding fisheries against serious damage by Herons, no doubt one might soon be found. We hope that those who are in a position to make experiments in this direction, or to encourage others to make them, will not neglect their opportunities

In conclusion, we need hardly point out that in such a large and ambitious inquiry errors of various types cannot be absolutely eliminated. Although there is no reason to suppose that, over the greater part of England at any rate, the census falls conspicuously short of accuracy, there are many points of detail on which it is in the power of our correspondents to amplify or correct our information. In fact already since the county tables were printed our attention has been drawn to two existing heronries which were unrecorded and had escaped the census. One of these is in Northumberland, where other unknown sites probably exist : the other, in Hertfordshire, has flourished for at least thirty years, apparently, without ever coming to the knowledge of the local authorities. We hope that anyone who is in a position to check us in this way will not hesitate to do so and we will welcome further relevant data of any sort, including counts for 1929 and afterwards of any colonies, whether they are already recorded or not. We do not propose to publish such material piecemeal as it comes to hand, but to let it accumulate until an adequate *Corrigenda and Addenda* can be made out of it ; all contributions will therefore serve a useful purpose. Finally, may we remind all readers of this Report that it represents an experiment in practical ornithology, and that many of the details given in it have been supplied, and are now made public, in the conviction that such confidence is desirable and will not be abused ? We believe that knowledge can do more than secrecy, both for ornithology and for the interests of bird life ; this view has been shared or accepted by our generous correspondents and we trust that everyone into whose hands the result of their labours may fall will see to it that this candour does not in any way add to the embarrassments, either of the heronries, or of those in whose keeping they are.

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NOTES

LONG-TAILED TIT'S NEST WITH TWO HOLES.

IN April, 1926, close to my house in Mawgan-in-Pydar, north Cornwall, I found the nest of a Long-tailed Tit (*Egithalos c. rosea*) in a low thorn bush, in process of construction. When incubation was commenced, I noticed the tip of the bird's tail projecting through the roof of the nest. On examination, I found a neatly-made hole in the roof of the dome at the part furthest from the entrance aperture. On every visit during several succeeding days, I invariably found the gently pulsating tail showing clearly, through the hole, well above the nest.

B. H. RYVES.

BLACK REDSTARTS IN PEMBROKESHIRE.

ON November 21st, 1928, a male Black Redstart (*Phœnicurus o. gibraltariensis*) was seen near the cliffs at Martinshaven, the extreme south-west corner of Pembrokeshire. On March 16th, 1929, another, which appeared to be a young male, was seen on the island of Skokholm, where it remained for eight days. On April 4th, another Black Redstart was seen on the island. This was lighter in colour and was probably an adult female. It remained for two days. R. M. LOCKLEY.

[Dr. F. Penrose informs us that he saw a Black Redstart at Bournemouth on March 20th. From this and other information there appears to have been an arrival in some numbers in the west about the middle of March.—EDS.]

BEWICK'S SWANS IN CHESHIRE.

ON March 16th, 1929, a herd of twelve Bewick's Swans (*Cygnus b. bewickii*) appeared on Marbury Mere, near Northwich, Cheshire, while it was still very largely covered with ice; they were swimming in an open patch of water at one end of the mere and at first allowed a very near approach.

Eleven of the birds were adults (varying only in the amount of black on the culmen of the bill) and one was a rather dusky immature bird.

After they had remained on the mere for a week—on one occasion at least flying away and returning some minutes later—I was surprised to find, on March 23rd, that there were thirteen in the herd; the newcomer was a second immature bird, somewhat more dusky than the first. All thirteen were to be seen daily till March 30th, but on March 31st only one

restless immature bird remained and on April 1st it, too, had disappeared.

During their stay they were seen by Mr. T. A. Coward, Mr. J. Moore, Mr. R. M. Garnett, Mr. A. G. Haworth and other observers on many occasions.

A herd of ten visited the same mere from April 2nd to 5th, 1924 (*cf. British Birds*, Vol. XVIII., pp. 24-25), and I saw two there on February 6th, 1926, which were seen by Mr. J. Moore also two days later. A. W. BOYD.

PINK-FOOTED GEESE IN MIDDLESEX.

ON January 13th, 1929, there were four Pink-footed Geese (*A. brachyrhynchus*) far out on the Upper Reservoir at Staines. The party was extremely shy, and at about four o'clock flew away towards Windsor, apparently settling on the market gardens in that direction.

Next day Mr. A. Holte Macpherson saw these four birds under ideal conditions and was able to identify them with certainty. Apparently they repeated the procedure of the evening before, but returned to the reservoir about ten minutes later. They also climbed on to the bank, and uttered the typical call-notes, whilst the small beak was clearly visible. On the same day (the 13th) a Slavonian Grebe (*Podiceps auritus*) was present on the lower reservoir, where it had been for at least a week. On the 13th there was a dead Slavonian Grebe at the Molesey Reservoirs (Surrey), where Shoveler, Scaup (one ♀) and large numbers of Goosanders and Smew were present during the month. T. H. HARRISON.
P. A. D. HOLLAM.

FERRUGINOUS DUCK IN SOMERSETSHIRE.

A FEMALE Ferruginous Duck (*Nyroca n. nyroca*) was shot in the River Axe, Lymphsham, on February 14th, 1929. The bird is now in my collection, and I shall be glad to show it to anyone who cares to see it. F. H. LAURENCE WHISH.

LONG-TAILED DUCK IN SOMERSET.

ON November 25th, 1928, during a period of westerly gales, I watched an immature Long-tailed Duck (*Clangula hyemalis*) on the Lower Reservoir at Litton, N. Somerset. According to Millais, the sex of immature birds is easily recognizable by October of their first year, and from the plumage characters of this bird, which were very carefully and fully observed, it was certainly a female. The habit of opening the wings and spreading the tail-feathers in diving, recently commented on by Mr. Oldham (*antea*, p. 214), was also remarked in this

bird. I was not able to time the dives with minute accuracy, but several which I timed approximately were all in the region of thirty seconds, some a trifle more, some a trifle less.

In connexion with the observation I should like to acknowledge my indebtedness to Mr. C. R. Stonor, who saw the bird on November 22nd and, recognizing it as something unusual, immediately sent me a careful description, which left little doubt in my mind as to its identity and enabled me to pay a flying visit from Oxford and settle the matter. According to the reservoir keeper the bird arrived a day or two before Mr. Stonor saw it. The record is the fourth or fifth for the county.

B. W. TUCKER.

COMMON AND VELVET-SCOTERS AND OTHER DUCKS INLAND IN ESSEX.

THE recent severe weather was not without its influence on the birds of the Lea Valley Reservoirs, for although they were mainly sheets of ice during the latter half of February and early March, yet one or two limited stretches of water remained open and were consequently crowded with wild-fowl, and some less usual birds made their appearance.

Amongst these I identified on February 16th, 1929, a female Velvet-Scoter (*Oidemia fusca*), and on March 3rd two females of this species, as well as a male and female Common Scoter (*Oidemia nigra*). The occurrence of these birds is of considerable interest to Essex ornithologists as the Common Scoter has only once previously been recorded from an inland locality, and I know of no other inland occurrences of the Velvet-Scoter.

Other ducks seen at this time worth mentioning were a Scaup (*Nyroca marila*) on February 15th and 16th and two on March 3rd.

Common Pochard (*Nyroca ferina*) were unusually numerous on March 2nd, when I counted at least three hundred on the Racecourse Reservoir, this being the largest gathering I have seen on these reservoirs.

W. E. GLEGG.

BRITISH BRED LAPWING REPORTED FROM ITALY.

A LAPWING (*Vanellus vanellus*) ringed (U.8960) as a young bird by Dr. H. J. Moon at Kirby Lonsdale, Westmorland, in June, 1928, has been reported as having been shot on March 4th, 1929, at Rovigo (Venetia), Italy, by Signor C. Rizzato. As the regular trend of Lapwings from this country is to the south-west and south, this occurrence must be considered as quite extraordinary. The only other birds ringed in this country and reported from Italy have been a Wood-Warbler

and a Cuckoo. Ringed Lapwings hitherto reported from Italy have all originated from Hungary with the exception of one from south-eastern Germany. H. F. WITHERBY.

BLACK-TAILED GODWIT INLAND IN CHESHIRE.

FOR twelve days in March, 1929, a Black-tailed Godwit (*Limosa l. limosa*), an unusual visitor inland, frequented Marbury Mere, near Northwich, Cheshire.

It was first seen on March 6th by Mr. J. Moore, when the mere was entirely frozen up and it fed daily at the mouth of a brook, where open water extended for a few feet. I saw it myself first on March 9th—a bird with ruddy colour on face, neck and breast, though not yet in full plumage—and from then until March 17th it was seen daily by Mr. Moore, Mr. A. G. Haworth and myself, often at a distance of a few yards.

The ice thawed gradually round the sides of the mere, but until March 17th there was a great sheet of ice across the middle and on this the Godwit spent a great deal of time among the Mallards and Teal, going there whenever it was disturbed from the mouth of the brook.

The Black-tailed Godwit has occurred at precisely the same spot twice before. Mr. J. Moore tells me that he saw one there on April 15th, 1924, and on April 26th, 1911, I saw a Godwit flying away from the mouth of the brook, which, from its very definite, broad, white wing-bar, was obviously of this species. A. W. BOYD.

BREEDING OF LESSER TERN IN SOMERSET.

IN July, 1928, I found a pair of Lesser Terns (*Sterna a. albigrons*) breeding on the coast of Somerset. I had them under observation on July 3rd and 4th, and on the latter date watched one of them down on to a nest with two eggs, of which I have published a photograph in the *Report on Somerset Birds*, 1928, issued by the Ornithological Section of the Somerset Archaeological and Natural History Society. Pairs and single birds have been reported on the coast in May for several successive years and, as I had reason to believe when I published my note in the Somerset Report and have since ascertained definitely, 1928 was not in fact the first year in which they bred. The above is, however, the first authenticated instance recorded. B. W. TUCKER.

THE EFFECT OF SEVERE WEATHER IN 1929 ON BIRD-LIFE. We have received several communications on the above subject and shall be glad of further reports from readers in any part of the British Islands. Reports should be definite as to the locality, dates, species and numbers of each affected and

in what manner. The bodily condition of any birds found dead should be stated and where a diminution has been noticed as close an idea as possible of comparative numbers should be given. A brief account of the weather in the district, with temperatures, should be added if possible. If there has been no observable mortality or diminution this should be stated.—EDS.

HOODED CROWS IN LONDON AREA.—Mr. A. H. Bishop informs us that two Hooded Crows (*Corvus c. cornix*) have been frequenting the banks of the Thames between Chiswick and Barnes for the last six weeks, *i.e.*, from about March 3rd up to the time he wrote (April 14th). Mr. Bishop states that these birds can usually be seen feeding in company with Carrion-Crows when the tide is low.

LESSER GREY SHRIKE AT FAIR ISLE.—Mr. J. Wilson states (*Scot. Nat.*, 1928, p. 127) that an adult male *Lanius minor* was obtained at Fair Isle on May 25th, 1928, this being the second recorded occurrence in Scotland.

BLACKCAP IN WINTER IN MIDLOTHIAN.—Mr. V. D. van Someren states (*Scot. Nat.*, 1929, p. 26) that a *Sylvia atricapilla* visited his bird-table at Liberton on January 27th, 1929.

MARTIN IN NORFOLK IN DECEMBER.—Mr. R. L. G. Wathen informs us that he saw a Martin (*Delichon urbica*) flying over the lake at Bolwick, Norfolk, on December 5th, 1928.

PEREGRINE FALCON SEEN IN INNER LONDON.—We are informed by Major W. D. Marcuse that Mr. A. Christiani, the Norwegian ornithologist, was walking in St. James's Park on the morning of February 14th, 1929, when a Peregrine (*Falco p. peregrinus*) came down over the water in the park and subsequently perched on a tree, apparently watching the duck on the small space of water which was free from ice. While Mr. Christiani was able to establish the identity of the bird as a Peregrine, he was unable to watch its further movements owing to the fact that he had to keep an appointment.

BLACK-WINGED STILT IN LANCASHIRE.—Mr. J. R. Charnley states (*Field*, 21-2-29, p. 313) that a specimen of *Himantopus h. himantopus* was shot by a local gunner on Freckleton Marsh, near Preston, on December 13th, 1928. We are informed that it is an immature bird and that its history is entirely satisfactory.

EARLY ARRIVAL OF SANDWICH TERN IN DEVON.—Lt.-Col. R. M. Byne informs us that he clearly identified, with the aid of binoculars, a *Sterna sandwicensis* in Dawlish Bay, south Devon, on March 18th, 1929.

LETTERS.

THE DIVING-HABITS OF THE LONG-TAILED DUCK.

To the Editors of BRITISH BIRDS.

SIRS,—We are inclined to think that Mr. Charles E. Alford in his letter *re* the above (*antea*, p. 331) is perhaps not altogether correct when he remarks that the conditions under which we made observations "must be considered rather artificial," for, after all, during the breeding-season at any rate, this species is to be found on, and presumably obtains its food from, inland waters; also during the winter months there are annually quite a number of records of birds seen feeding on lakes and reservoirs, therefore, we submit, fresh water habitats are quite natural, and that observations made under these conditions have quite as great a bearing upon the subject as those made on birds diving in salt water, provided that observations on dive-periods in fresh water are considered on parallel lines, not in conflict, with dive-periods in the sea.

It may be of interest to record that the birds we observed selected the deepest part of the reservoir for their feeding-grounds although plenty of shallower water was available.

CARDIFF, *April 4th*, 1929.

GEOFFREY C. S. INGRAM.
H. MORREY SALMON.

THE DIVING OF SCOTERS.

To the Editors of BRITISH BIRDS.

SIRS,—I read Mr. Oldham's notes on the partial opening of the wings by the Long-tailed and other ducks in the act of diving (*antea*, p. 214) with especial interest, partly because I had lately observed this habit in a Long-tailed Duck on a Somerset reservoir which I record on another page, but more particularly in connexion with the same thing in Scoters. Mr. Oldham quotes the statement of Dr. C. W. Townsend (*Auk*, XXVI., pp. 240 and 241) that Scoters and Eiders also show this habit, but states that he himself has not observed it in these species. Townsend refers more particularly to the American Scoter (*Oidemia nigra americana*) and White-winged Scoter (*O. fusca deglandi*), which are of course races of our Common and Velvet-Scoters respectively, and the Surf-Scoter (*O. perspicillata*), but he does not make very clear how regular he considers the habit in these birds. As further observations seem desirable, I write to record that a party of five Velvet-Scoters, which I watched with a telescope from Jacob's Ladder, Sidmouth, S. Devon, in mid-January, 1928, all consistently opened their wings as they submerged. On getting home I looked up the subject in Millais (*British Diving Ducks*), but found that it was not mentioned; indeed, the only statement having any bearing on the point at all (Vol. II., p. 70) is that he "does not think they use the wings under water, at any rate to the same extent as the Eider." I therefore concluded that my birds for some reason were behaving unusually.

I have not had much opportunity of serious watching of the Common Scoter; most of those I have seen have been from moving boats. But the birds in a considerable flock which was present off Sidmouth at the same time as, and not far from, the above-mentioned Velvets, definitely did not show the habit under discussion, nor did a single female which I watched diving freely on one of the Somerset reservoirs.

OXFORD, *March 14th*, 1929,

B. W. TUCKER,

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NOTE.—The nomenclature followed in this volume is in accordance with the "Systematic List" printed at the end of the Volume II. of *A Practical Handbook of British Birds* and reprinted in *A Check-List of British Birds*. Additions and alterations to this list appear on pp. 101-2 of this volume of *British Birds*.

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